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ABSTRACT

The document is the terminal report of an Agricultural Management and Training Project. Chapter I, The Project Rationale and Setting, explains that the project focuses on small farmers in less developed countries, specifically Costa Rica. It was assumed, however, that the system of analysis developed would have general application to the study of public institutions serving agriculture. Chapter II, Data Gathered by the Modules of Inquiry, includes a general view of the agricultural task environment, covering the small farm setting, the agricultural agent, the regional organization, and the orientation and knowledge level of national administrative leaders, An Evaluation of the Modular Research Approach (Chapter III) attempts to set forth some of the problems the research team encountered, especially the political issues that were the consequences of particular interests of the other organizations involved in this project. For Chapter IV, Suggestions for Facilitating Institutional Change, the study team accepted the premise that public institutions, a dominant force in agricultural development projects, should have small farmers share in the development process so that their needs can be more effectively met. Covering the management workshop, change agent training, and small farmer organizations, the chapter concludes that new institutions or major revisions of old ones will be required to meet the expanding needs of the small farmer. The Appendix, Management Training for Rural Sector Change, explains organizational change strategies and the organizational process. (KM)

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A MODULAR APPROACH

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A SUMMARY REPORT ON:

THE AGRICULTURAL MANAGEMENT RESEARCH AND TRAINING PROJECT

MSU/AID, CSD – 3132, 1974

I WISH TO EXPRESS MY APPRECIATION TO DRS. WILLIAM HERZOG AND MASON MILLER FOR THEIR HELP IN THE EXTENSIVE REWRITE AND EDITING OF THIS FINAL REPORT.

GARLAND P. WOOD
PROJECT DIRECTOR
JANUARY 8, 1974

ACKNOWLEDGEMENTS

This is the terminal report for the MSU/AID contract CSD-3132, dealing with Agricultural Management Research and Training. It is a summary report in that it only briefly reviews the hypotheses and premises the core team developed. The report does not include the research instruments nor the annotated bibliography written for this agricultural management research and training project. The annotated bibliography and research papers will be published in the near future but are not a required part of the contract.

The multidisciplinary team working on this project were as follows: Dr. Melvin Blase, visiting professor of Agricultural Economics from the University of Missouri; Dr. William Herzog, Department of Communications, MSU; Dr. Mason Miller, Education Institute, MSU: Dr. Winston Oberg, Department of Management, MSU; Dr. Spencer Wellhofer, Department of Political Science, MSU; Dr. Irving Wyeth, Institute of International Agriculture, MSU; and myself. The team was ably supported by Tom Dickey and Ken Shwedel, graduate students in the Department of Agricultural Economics. Mr. Shwedel provided valuable campus back-up help on the project and Mr. Dickey handled the field survey work in Costa Rica. Ms. Marilyn Baumgartner was the secretary for the project and as such was a major factor in coordinating the team's efforts and keeping administrative records flowing smoothly. We also wish to take this opportunity to thank our many colleagues at MSU who have made a contribution to this ef-

fort and to our co-workers in IICA who assisted in the initial discussions and data collection for this project.

The team wishes to express its appreciation to Dr. William Siffin, Mr. Jack Koteen and Dr. Ken Korhner of TAB/AID, Washington for their financial funding and moral support of this project. This study that focuses on management capability for agricultural development is a new area of inquiry. Since its primary concern is with management of public institutions in the LDCs, the work involved major problems of entry and credibility. This was recognized in the initial scope of the work and for this and other reasons, a major breakthrough was expected to require at least a six- to eight-year effort. This report then is in essence the beginning of a longer and larger search for knowledge in this field.

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Chapter I
THE PROJECT RATIONALE AND SETTING

Introduction

The purposes of this chapter are first to present a general rationale for trying to help public institutions in their efforts to aid small farmers, then to lay out a series of modules useful for thinking about and gathering information about an organization, and finally to present the results of the application of one of these modules--that having to do with impact of the organization's programs on farmer clientele--for what it discovered about some specific projects in Costa Rica.

The Small Farmer

In this decade of the seventies, the small farmer of the world is being talked about; not with enthusiasm but as a subject requiring attention. In the lesser developed countries (LDCs) of the world, his sheer weight of numbers argues for this attention. He represents over half to three-fourths of the active labor force in most of the LDCs. Yet his productivity is so low that he serves as a drag on the nation's economy.

Part of the explanation for the LDCs delay in dealing with their small farmers' problems was the sheer pressure of keeping their nations politically and economically afloat in the rapid changes of this time. There were more insistent problems demanding the time of the thin ranks of trained personnel. Partially the delay was based on the premise that improvements in the industrial,

manufacturing and distribution sectors would absorb the surplus agricultural human resource, provide the needed inputs to the small farmer and, through his improved efficiency, solve his and the nation's need for increased amounts of agricultural products. The expected process was so logical that few resources were devoted to finding out if the process was working as expected, and if not, why not.

It became apparent to those studying the problems of the small farmer of the LDCs that neither private businesses nor public institutions were providing that input mix that would help him break out of his mold of subsistence agriculture. He was struggling with poor seeds and lack of fertilizers, pesticides, herbicides, all-weather roads, transportation facilities and adequate markets. But these farmers have another handicap. Many have not moved sufficiently from traditional patterns of production to even grapple with problems of new technology. They are enmeshed in medusan coils of ignorance and traditionalism.

It is now generally agreed that the major efforts for providing the input mix of services to make the small farmer productive must come from public organizations and institutions in the LDCs. Little attention has been paid to upgrading the management of public institutions attempting to do development work in rural areas of the world. Yet it seems the actions of these agencies are crucial to rural change and development. Recognition of this lack led to the project now being reported on. A multidisciplinary team with a variety of overseas experience and a broad grouping of interests in management research, de-

velopment and training, was put together to see what could be done.

The desire was to develop ways of working with host nationals to help them upgrade their management skills and abilities, and to help them become self-sufficient in gathering useful data about themselves and their development programs and in taking steps to correct problems that might become apparent; all with the end goal of better serving the small farmer.

This report will detail a model of how "outsiders" can help public institutions become more effective in serving the economic development needs of the small farmer. Results of a partial test of this model in Costa Rica will also be reported.

First we sought to develop a system of analysis for those public institutions having agricultural development responsibilities. The aim was to develop a practical system of analysis that would aid administrators in the planning, design and implementation of rural development activities, especially those directed to the small farmers. We worked for a methodology that eventually we thought and hoped could be used by in-country specialists with a minimal dependence on outside consultants. The analytical procedure sought to help the administrator:

1. understand his organization in a systematic way: its existing organizational characteristics and operating procedures;
2. define the various clients of his institution including the small farmer client as to their

aspirations, resources and needs; and

3. recognize any gaps between the needs of his small farm clientele and the operational processes used by his institution to meet those needs.

The assumed purpose of this self examination by an institution would be to: gather information with which to specify key problems to be encountered in rural development projects, gain information useful for attacking the problem and get baseline data for control and evaluation of the project.

The project directed its attention to the management aspects of public institutions very early in its work. It recognized that the research could point out the main problems and even give some clues to their resolution, but unless management believed the data and was willing to invest the time and take the risks of implementation and change, nothing would happen.

With this belief that host nationals in the long run must be the ones who make decisions to change if change is to be at all permanent and effective, the project team wanted to develop a "colleague" attitude and atmosphere between host nationals and the "outside" project team. The team saw their role basically as consultants with special skills and tools in analyzing an organization, action research, consultation and training. These skills and abilities are useful to an organization interested in change and development and in doing a better job serving small farmers as well as other clientele.

The use of such skills and abilities would need to

be worked out with any host organization or organizations entering into a cooperative relation with the project team. Thus the exact patterns of consulting, action research and training would be worked out jointly in each specific situation.

The research team eventually was involved with three major objectives: 1) developing a methodology of institutional analysis, 2) finding an approach that would allow entry into sensitive institutions in a manner that would generate trust between administrators and consultants for longer-run remedial efforts, and 3) accepting the challenge that the ultimate clientele of all this effort should be the small and medium sized farmer.

The first and third objectives were specified early in the research. The need for entry and being legitimized became a major concern to the team as the project developed since the success of this whole effort depended on entry.

The reasons are legion for the difficulties of projects for small farmers. Small farmers are politically underrepresented in the developing nations. Joel Bernstein, Director of the Technical Assistance Bureau of AID, adds that if the small farmer lacks political power, he also has lacked and still lacks the public institutions needed to crack the circle of poverty and make the quantum jump from subsistence to commercial farmer status. Gene Ellis[1] in his provocative paper on reaching

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[1]Ellis, Gene, "Agricultural Development Strategy in Ethiopia: On Reaching the Peasant Sector," p. 9.

the peasant sector in Ethiopia says, "It [government effort] reaches the peasant sector, only to destroy it. There is no way for government to reach the peasant sector. The efforts to date have been largely in vain."

Neither Ellis nor Bernstein nor others say the job of reaching the small farmer with effective development projects is impossible. It is more a recognition of the past failures and tremendous difficulties encountered in implementing development projects focused on him. The small farmer is politically weak, leaderless, has limited human and physical resources and is spatially separated and at the mercies of pests, diseases and weather.

Much has been written about the dual sector economies, with agriculture usually depicted as the traditional sector and the urban areas as modern.[1] But such highly aggregated models oversimplify the the agricultural sector, overlooking the dual nature of the agricultural sector itself. In many, if not most of the less developed countries, large, highly mechanized farms coexist with a much larger number of small farms employing primitive technologies. The public sector institutions which have evolved in these countries have tended to serve the rural elite on the large farms to the exclusion of the more numerous smaller farmers.

Now some recognition is being given to the need for the entire agricultural sector to modernize if short-lived growth is to give way to sustained national devel-

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[1] Ruttan, Vernon W., Growth Stage Theories, Dual Economy Models and Agricultural Development Policy, University of Guelph, Department of Agricultural Economics, No. AE 1968/2, 1968.

opment. This discovery of the small farmer and the lack of institutional services of which he can avail himself has raised serious doubts about past agricultural development strategies and the lopsided growth that has resulted in the agricultural sector.

From the point of view of the small farmer, what alternatives exist? He can migrate to urban centers, thereby contributing to the burgeoning slums around urban centers. A less traumatic choice is to remain in a subsistence state, eeking out an existence as either a small farmer or a landless laborer. The most difficult, and almost impossible alternative under most institutional systems in the LDCs is to jump from subsistence to commercial farmer status.

The project team noted these difficulties as it continued assessing the problems of reaching the small farmer clientele in the low income countries. Case studies from private and public development agencies were studied. Research reports were combed. "Success" stories from given countries were analyzed. The personal experience of the team was added in. The evidence accumulated is very convincing that the institutional deck is stacked against the small farmer. Public sector institutions have little if anything to offer the small farmer under their present organization and operating procedures. Educational programs are for the literate. Credit is generally limited to those with clear title to the land. Technology requires purchased inputs. And so it goes.

But no longer can the assumption be made that the small farmer can be left behind and forgotten. If inte-

grated national development is to occur, the effective demand of the small farmer for industrial products is needed. If rapidly growing populations are to be fed adequately, the small farmer becomes a valuable resource. Political development and accompanying economic stability require participation by the tens of thousands of small farmers.

The team members were fully aware that if the small farmers were to improve their financial status, certain conditions were necessary.[1] There would need to be access to resources in general and the services of public sector institutions in particular. Knowledge about improved production and marketing practices must be available. Credit must be accessible. Inputs such as improved seeds and fertilizers need to be present for purchase. Price data must be freely exchanged. Equitable tenure arrangements are required.

The list is a long one indeed. Perhaps the most important of all is access to the political process as a means of obtaining and maintaining these institutional services. A nationally functioning public sector will respond to effective demands. Small farmers must gain access in an organized manner for their demans to be effective.

The Research Approach

The research approach developed by the project team evolved from seminars, workshops and discussions and was then modified to meet a limited field research budget and bureaucratic clearances. A modular approach was created.

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[1] Shwedel, S. Kenneth, Utility, Probability and the Adoption of Agricultural Innovations. Unpublished Master's Paper, Michigan State University, 1973.

by the core group, which incorporated the premises and insights of disciplines that were relevant to the studies of agricultural institutions.

Within the modular approach, the team chose six points of reference for their research. These target areas are modules or subsystems of the total model. The modules are not mutually exclusive. They probe the institution at various levels of operation with different tools of analysis seeking insights into the operation and structure of the system and its resulting performance.

The six modules are:

1. Systemic linkages among national institutions
   This module helped specify those national institutions having agricultural development responsibilities. The module gave us information as to how important one institution viewed another as being in carrying out its development responsibilities.
2. Intra-institutional status-role study
   This module sought information on happenings within the life of an institution. What are the formal and informal relationships? What institutional doctrines do they adhere to, what are the work objectives and who sets them? We wanted to know what subordinates thought of their bosses in terms of being innovative, committed to their jobs, etc. Did the organizational personnel know about the small farm projects and what did they think their organization was doing about them?

3. Institutional interfaces

An institution lives in an environment of change and stress. Other institutions are seeking to enlarge their responsibilities, personnel, budget and authority often at the expense of existing institutions. This module sought information on these institutional struggles and boundary disputes especially as they concerned new programs such as small farmer development projects.

4. Farmer clientele

One very effective way of testing an institution's ability to implement a small farm program is to measure the impact of that program at the farm level. This module did such measuring and the results are a major input into this paper.

5. Leadership characteristics of institutions

Few deny the critical element of leadership in institutions but the research team was not given clearance to carry out this part of its study. A future study is planned to begin to test this module.

6. Communication flows within institutions and to clientele

This module sought information on channels of information within institutions and where blockages seem to occur. We wanted to know the content of the communication, how often it took place and between whom. We wanted to know what communications took place within the various institutions on the small farm projects and what information

got back to the institutions from the farmer and the agent directly serving him.

Initial Module Testing in Costa Rica--The Farmer Clientele Module

While the modular approach was originally conceived to produce a disjunctive "case study" of a single agricultural institution, it proved adaptable to the multiinstitutional study into which the project evolved in Costa Rica.

Costa Rica became the social laboratory for our research effort and the focus of the study was two development projects for small farmers administered chiefly by the Ministry of Agriculture. The team used the Corn-Rice project of Cartagena and the Corn project of San Carlos as the tracing mechanism to determine the effectiveness of certain agricultural institutions in carrying out small farm development projects. The two projects were only one part of the much larger AID loan program discussed in Chapter Two of this report.

One of the major objectives of the AID agricultural loan was to improve the small farmers' economic conditions. If the loan was to improve these conditions, the best place to verify that performance was at the farm level. The farm level research module was designed to test the performance of agricultural institutions in implementing such agricultural development programs. It should be remembered here that the so-called agricultural sector loan was composed of a number of small, not necessarily related, projects. The research effort at the farm level

was directed to the two projects upon recommendation of the respective regional directors because these projects were in operation when our field research began. A project was chosen in each of the two regions to reflect climatic differences and a reported difference in the management style of the regional directors.

Agricultural Project of Cartagena[1]

Location: This project was initiated April 13, 1971 in Cartagena de Santa Cruz, under the direction of the Agricultural Extension Office in Santa Cruz. The object of the project was to organize the small- and medium-size farmers into an association to facilitate the introduction of certain changes which would permit them to increase their yields of corn and rice, thereby raising their standard of living.

Objective: 1. Establishment of the Agricultural Aid Committee (Comite Agricola Auxilair) and Association of Producers (Asociacion de Productores).
2. Obtain credit.
3. Establish an agricultural input warehouse.
4. Establish the buying agency of the National Production Council (CNP).

Goals: 1. Construct a building to store agricultural supplies.

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[1]Plan II, for the second term of 1971, DOC-CAN-45-Rev. 2; August 11, 1971, pp. 27-28.

2. Have the national banking system establish loan limits which are relevant to technical agriculture.

Long-Run Goals: 1. Create an Agricultural Cooperative.

2. Establish an installation for drying and storing grain.

Present State of Project (as of 1971): 1. A neighborhood level committee has been established and an agricultural organizer is now in the zone.

2. In 1971, 551 manzanas[1] of rice (959 acres) and 390 manzanas of corn (679 acres) were financed, the expected yields were 46 quintales per manzana and 35 quintales per manzana respectively;[2] the number of farmers involved is 187.

3. The warehouse for agricultural inputs has been established. As a result, the price of fertilizer and other inputs has been substantially reduced.

4. Technical assistance has been extended through courses, audio-visual aids and farm visits.

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[1] One manzana = 1.74 acres.

[2] One quintale = 100 pounds, so expected yields were 2586 pounds per acre of rice and 37.6 bushels of corn per acre.

Corn Cultivation Project[1]

Location: The Regional Agricultural Center of San Carlos has selected an area around the villages of El Tangue and Los Angeles as the most appropriate to carry out the project using modern methods of corn production. The topography and soils are appropriate to carry out the project.

Objectives: 1. Increase the production of corn with the intention of more nearly supplying the national demand for this grain.
2. Elevate the standard of living of the farmers of this zone through agricultural activities.
3. Introduce changes in the traditional methods of cultivation in order to achieve an increase in output per land area.

Goals: 1. Farm an area of 600 manzanas of corn by the second half of 1971 with a production of 64 quintales per manzana.
2. Increase output per manzana by 24 to 40 quintales.
3. The project expects participation of 66 small farmers with an average area of 20 to 30 manzanas.

Present State of Project (1971): The project is in its organizational period. Nevertheless, the Center has conducted tests with the local variety "Maicena-Tusa Morada" which has proved better than other hybrids and local

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[1]Plan II, for the second term of 1971, DOC-CAN-45-Rev. 2; August 11, 1971, pp. 31-32.

varieties. Also, fertilizer tests have been conducted. At present the participants are being selected and contacts are being made to receive credit.

The National Environment

The purpose of the AID agricultural loan to Costa Rica was to provide a better life for the small farmer. This would be accomplished through increased production, an improved marketing system, the provision of credit and other inputs needed to help the small farmer gain some control over the physical and economic bottlenecks that had so long blocked his progress. The announcements by public figures and the objectives set forth in the capital assistance paper of AID left no doubt that the small farmer could expect more attention and resources.

Actually the country of Costa Rica has many advantages not present in many of the countries seeking to change their traditional agricultural sectors. It has a high literacy rate, a concerned government, unexploited land resources and a developing infrastructure. Consequently, there were high expectations that this loan plus additional committed funds of the Costa Rican government would make large changes in the lives of the Costa Rican farmer.

The farm-level questionnaire was designed to test a number of variables considered important in the administration of rural development programs. It was expected that some of these premises would be better predictors of the likely success of development projects, and so future research would focus on these more definitive predictors.

The farm questionnaire gathered data on the farm family characteristics such as number of children, age of members of family, how long they had lived in the region, etc. The object was to gain a better understanding of the farm clientele involved in the projects. A limited amount of information was gathered on the infrastructure of the communities in which they lived. These data included access to all-weather roads, schools, running water, electricity and communication systems.

The questionnaire was designed to record the impact of the AID loan projects at the farm level on the farmer's income, his use of new technology, his organizational patterns, attitudes toward governmental institutions, communication patterns and his participation in the project decisions. The questionnaire gathered information on how adaptable the program was to local conditions and how innovative the institutions were to meeting this new clientele's needs. The questionnaire probed the farmer as to the objectives of the project, who asked his opinion, to whom did he register his complaints.

It was hypothesized that the political articulation of the farmers would be important for continued governmental efforts in small farm projects. It was also a premise that strong political and administrative commitments would be needed to add to the possibilities of successful small farm programs. One of the elements of the AID loan was a partial decentralization of the Ministry of Agriculture (MAG) to regional offices. The farm-level questionnaire revealed some information on this decentralization effort.

The questionnaire tested the farmer's attitudes that could be used as a measure of his potential for change. Such a measure would be helpful in deciding how quickly farmers might adopt new programs.

Public institutions assuming developmental roles as contrasted to their traditional management functions must make major changes in their operations to be effective. This research studied Costa Rican institutions, largely MAG, to note their attitudes and performance toward small farm projects. It probed their communication flows, knowledge of projects and their personnel linkages at the farm level.

The following is a brief review of information taken from the farm questionnaire. The data presented are selective in seeking to test the effectiveness of institutions in administering agricultural development projects.

The main objectives of the AID loan and the political elaborations of the objectives were briefly four:

1. increase farmers' income through increased production of needed grains and other agricultural products;
2. secure farmers' participation in decisions affecting them;
3. employment generation in rural areas;
4. lessened income disparities.

What Did We Find?

We found that drought conditions in Cartagena and less rain than normal in La Fortuna caused both first-year crops to be economic failures. Diseases, insects, lack

of knowledge of soils and fertilizers, late clearing of brush from fields and late plantings all had a contributing effect. There were no new seed varieties available and the traditional varieties had a limited response to additional fertilizer inputs.

The loan foresaw that there might be losses incurred by farmers undertaking this new technology and provisions were made for an income supplement. However, a year after the projects were started the agents in the field were not as yet informed about this provision.

The two crop years covered by the study gave too short a time span on which to evaluate whether production for the individual farmer and the nation could be increased by such projects. The fact that only eleven of the first year's 48 participants in the Corn project at La Fortuna signed up for the second year indicated the seriousness of the problem. The project was dropped after the second year. The comments of the farmers leaving the project indicate that MAG lost considerable credibility in that area.

Our data would suggest that many of the farmers were worse off economically after participating in the project. However, the land that was cleared in La Fortuna will be available for future crops and the new technologies adopted for the project were not being completely dropped, only partial reversion to previous levels occurred.[1]

The objectives of increased farmer incomes, in-

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[1]Dickey, Thomas, A Mechanized Corn Project in Costa Rica: A Case Analysis, Chapter IV, Thesis for MS Degree at Michigan State University, 1973.

creased production and the lessening of income disparities were not achieved by these two projects during the two years studied.

How did the objectives of farmers participating in decisions affecting them come out? The farmer was little involved as to his opinions and evaluation. In La Fortuna he was well informed on the project goals and objectives but few asked his opinion. In Cartagena, only a few knew they were even in the project, so even a minimal communication did not take place.

The small farmer of Costa Rica is poorly organized, weakly led and lacking political clout. He is generally passive and neither expects much from his government nor does he receive much. Our research in two regions of Costa Rica on two agricultural projects verified most of these general observations about the Costa Rican farmer. In spite of the reported effort in Cartagena to organize the farmers, the data gathered there showed an almost total lack of knowledge of and participation in such organizations. Few of the farmers had ever been asked their opinions about the way the projects should be organized and none had been asked for suggestions and criticisms of the projects after they were initiated. MAG officials and the farmers were accustomed to the top-down approach.

The fourth objective was employment generation in the rural areas. The almost complete mechanization of the Corn project of La Fortuna resulted in a lessening of farm labor used for this enterprise. However, these farmers have other enterprises and the data are not adequate to indicate the effect on total labor utilization in this

area. In Cartagena the increase of loans allowed some laborers to rent land and thus move out of the precarious agricultural labor class into the precarious land rentor status. Our field workers reported an increase in the total land in cultivation and some increase in labor utilized in the Cartagena area through conversations with farmers and merchants. The questionnaire didn't include these questions.

Our research gave us other insights concerning the Costa Rican small farmer. He is generally receptive to government efforts in spite of known past failures. He does not blame the government for things outside the government's control but is intelligent enough to place the blame when government requirements lead to failure. He has criticized the government agencies for poorly trained agents and agents that show off their "knowledge;" those who talk and do not listen. He complains, but not loudly, that no one asks his opinion on the project. When he complains, nothing happens. He is critical of an organization that requires his rigid adherence to the project rules yet itself failed in getting land cleared on time, provide improved seeds, test their recommended fertilizer application or develop market outlets.

He has some knowledge of the regional organization that was set up to make such small farmer projects more responsive to the small farmer's needs. Some of his neighbors sit on these regional boards, but he knows little of what goes on or why "things" have not changed.

The research indicated the small farmer was more willing to change than many of the administrators

in the public institutions serving him. He has long used credit to finance his needs and when new credit was to be coupled with other technological inputs, he agreed. He adopted fertilizers, herbicides and new seeds in both regions. In La Fortuna he signed for mechanical land clearing, corn planting, cultivation and even corn harvesting by mechanical means in addition to the use of better seeds, fertilizers and herbicides. When most of the farmers dropped out of the La Fortuna project the second year, they didn't completely revert to their former level of technology. Most still plowed their land but fewer used fertilizers and herbicides (or used less amounts). There were fewer farmers using machinery for cultivation and harvesting.

Some farmers voiced their concern as to how long these projects would last. The farmers spoke of projects on cotton and beans that were dropped after a year or two. Only the cotton gins remain along the road side, and such projects are remembered with bitterness or apathy by those involved. They know that new projects are already being talked about, that the technician and the agent are directing most of their attentions to this new effort.

As we reflect about some of the information gained from the clientele's responses and note the negativism, the client's lack of information about the project, his apathy and lack of sensing of how to get the institutions to meet his needs, we need to make some premises concerning what went wrong. The AID loan objectives were given earlier but this statement taken from the Capital Assistance paper is worth repeating.

"The keystone of the strategy of the Agricultural Sector program is the education of the small farmer: education in modern production practices, education in the value and techniques of organization. Without such education, the credit, storage facilities and markets will be of little use. With such education, the credit, storage facilities and markets become important links in a chain which can lift the small farmer out of poverty. But, the first and indispensable link is education."[1]

Let's follow the above analogy. The keystone is the central topmost stone of an arch which supports or holds together the others. Education is the keystone according to this AID report--education in modern production practices and education in the value and techniques of organization. Education is understanding the relationships or principles upon which decisions may be made. It is not being told what, when and where to do it.

Perhaps the "keystone" statement about education was idealistic considering the human resources available and the time horizon of the project. Certainly most farmers interviewed had minimal knowledge about the fertility characteristics of their soils nor did they understand the nature of the fertilizers recommended nor the amounts prescribed. If we take into consideration the limited research information available and that that information was borrowed from another area, we begin to realize the risks

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[1]Capital Assistance Paper, AID Costa Rica: Agricultural Development Program, June 16, 1970, p. 31.

the project coordinators were recommending that the small farmer take. There were some attempts to reach the small farmer with an educational program in Cartagena via the mobile bank and in La Fortuna through small group meetings on modern production practices according to the project coordinators. The educational "take" in modern production practices was minimal.

It is the second part of our keystone analogy "education in the values and techniques of organization" that the project fails, at least in the Corn-Rice project of Cartagena and the Corn project of San Carlos (La Fortuna). Our research data showed farm organizations in both areas as weak or nonexistent, and leadership of organizations equally weak. The tendency to tell farmers what to do, the minimal efforts to find out what were the farmer's opinions of the project, his suggestions, criticisms, etc., are a heavy condemnation to the goal of education in the values and techniques of organization. The keystone was never put into place and the projects collapsed!

If MAG has not reached the small farmer with an effective program that is improving his life, what happened? Did the research modules give us enough information about MAG that we might expect the results that did occur? The data gathered by our various modules certainly raised warning signals as to the possibility. MAG may carry out effectively other functions and projects in which it is involved, but it failed in the implementation of two small farm projects in two regions of Costa Rica. Why did this happen?

The Ministry of Agriculture

MAG is multifunctional having research, extension, development and regulatory responsibilities. It is multi-layered with national, regional and local offices. It is a traditional institution that in recent years has had developmental responsibilities thrust upon it. It is a relatively large institution in Costa Rica, yet only one of many institutions serving agriculture.

MAG lives in an institutionally competitive situation. The National Production Council (CNP) is one such aggressive, competitive institution whose budget now equals that of MAG. The land reform organization (ITCO) and the organization for municipal governments (IFAM) are aggressively expanding their programs and budgets.

In gaining perspective it should be remembered too that although the AID loan for Costa Rican agriculture was sizeable, not all the loan was to be administered by MAG. It included portions for marketing facilities, training of personnel at the national university, improving local government, etc. Nor was this the first major loan to MAG. There were loans from the World Bank, the Inter-American Development Bank and previous AID loans.

As we think through what MAG was attempting to do in the two regions and the problems, frustrations and failures encountered, additional insights are gained. The droughts undoubtedly had their effect on the farmers' attitudes toward the projects. But most of the farmers have lived with droughts and didn't blame MAG or the project for these losses. They did criticize administrative weaknesses of the project. These weaknesses included:

lack of program adaptability to meet locational variation, rice varieties recommended that were highly discounted in the market place, corn varieties not locally tested, MAG personnel lacking credibility, the storage and supply center in Cartagena poorly managed and the drying shed in La Fortuna used only minimally since farmers sell to truckers. In La Fortuna the farmers complained that they had to feed lunches to caterpiller operators and they objected to being charged on a per land unit basis rather than per hour to clear the brush and for plowing and discing operations.

There were other weaknesses of the project that became evident in our research:

1. Credibility

   There was great variation in reporting crop yields. MAG reported 50 quintales for the expected harvest, the farmers reported 16.8 quintales as the actual yield. The bankers believed the farmers were not reporting their production so as to avoid the loan payments and canceled further loans. Ill will was generated.

2. Communications

   Farmers listen to the radio every day yet little use is made by MAG of this medium of communication to transmit agricultural information to the farmers.

3. Competition

   There was jealousy between institutions. In Cartagena, between MAG and the National Bank; in La Fortuna, between MAG and CNP.

4. The Project Package Was Not New in Cartagena

The new element would have been there if technology and loans were implemented as a package, but the package was not put together. Land clearance costs in La Fortuna were prorated over four years. The land clearance benefit would last much longer.

5. Participation

It would seem essential that since so little was known about reaching the small farmer with development projects, he would be involved early in project planning. His input would be in project priorities, how to administer the project at the local level, how to build a continuous interaction between the farmer and the institution. The plans for farmer-administrator interaction were made but not implemented.

As our research probed the organization and its response to the development loan and its new small farmer clientele, we saw that the major export crops of Costa Rica including coffee and livestock products, were specifically excluded from this loan. The livestock loan for large producers came from another loan. In brief, most of the traditional commitments of MAG were to powerful clients excluded from this AID small farmer-oriented loan.

If we reflect on the structure of MAG, the institutional matrix of competing organizations, MAG's traditional functions and clientele and the new agricultural development effort thrust upon it, would we logically expect MAG to operate differently than it did? If so, why? We must remember that this new clientele is not likely to be

able to protect MAG in any way from competing institutions. The projects studied constituted only a small part of MAG's total human and financial resources. The loan, too, is for a limited period. Is there sufficient incentive for MAG to make organizational and personnel changes for the projects of such limited duration? The question may be rhetorical but the answer is crucial. Under present conditions it probably isn't worthwhile for MAG to make the changes needed to assure success for such small farmer projects. This may well be the situation for most public institutions in the LDCs' assigned small farmer development projects. How then can the total cost benefits to an institution be changed to make it worthwhile for them to reach this new clientele? We will return to this question in the concluding chapter of this report.

Summary

Our project team worked to develop a system of analysis for public institutions that would aid these institutions in their agricultural development responsibilities.

Costa Rica became our social laboratory but we assumed that the general guidelines and thinking of the project were more important than the Costa Rica data presentation. The project assumed a world-wide audience of development practitioners who would read the report for new information that could help them, that they could adopt or adapt, or that would trigger new ideas.

The approach says:

1. the overall goal is to achieve better life in rural areas;

2. a less general objective is to help rural-serving governmental agencies operate more effectively in serving the rural family and small farmer;
3. even more specific objectives of this management research project were to help these agricultural development institutions:
   a. better understand their own organizations, programs and impact on small farmers.
   b. become more aware of trouble spots in their organizational programs, relations with other rural-serving agencies and impact on clientele,

and then to offer them a variety of ways, as appropriate, to grapple with such trouble spots. Such measures might include further action research, alternative actions that management might take, and training programs as appropriate to these problems, such as problem-analysis-and-solution conferences, knowledge-and/or-skill-upgrading.

The problem focus of this project was the small farmer of the less developed country and more specifically of Costa Rica. It was assumed, however, that the system of analysis developed would have general application to the study of public institutions serving agriculture. The model of inquiry developed on the basis of the Costa Rican data was to be a first approximation, a first-stage testing of the model.

The next chapter will present the more extensive findings of our research approach. It will include a general view of the agricultural task environment including the small farm setting, the agricultural agent, the regional

organization and the orientation and knowledge level of national administrative leaders in regard to these small farmer projects.

Chapter II
DATA GATHERED BY THE MODULES OF INQUIRY

Perspectives

In the previous chapter, we stated the overall objective of our project was to develop a system of analysis for public institutions. The location of our social laboratory was Costa Rica and our modular research approach gave us insights into the planning, implementation and partial failure of two small farm projects administered largely by the Ministry of Agriculture. There was a plurality of conditions and institutions involved in the development and claimed failures of these projects. This chapter will present additional information gatnered by our research that should prove helpful in understanding the task environment of the agricultural projects in Costa Rica and the institutions associated with them.

The purpose is two-fold; to test whether the modules provide sufficient information on the institutional problems of implementing rural development projects in order that effective remedial actions can be specified, and to note if the module provides too much information suggesting the need for pruning.

The Task Environment

The U.S. Agency for International Development made a loan of $20,000,000 to the Costa Rican government. The objective was "The transformation of Costa Rica's small farm subsector from traditional to modern high-productivi-

ty production."[1] The loan specified seven areas to receive support: agricultural services, agricultural education, credit, cooperatives, marketing, land tenure and community organization/municipal development. A number of small development projects were initiated under the loan.

Our research team chose to study two of these projects after consulting with officials of the Costa Rican institutions involved in this agricultural development loan activity. The two projects chosen to serve as impact indicators and tracers of possible institutional problems were the Corn-Rice project of Cartagena and the Corn project of San Carlos. The two projects were located in significantly different climatic regions. Leadership patterns and clientele were reportedly different for the two projects. The projects were in separate political regions of the country and this allowed the study of two distinctive regional organizations as to their standard operating procedures and effectiveness.

The following profiles of representative farmers in the two areas were gleaned from the data on our questionnaire. As such, they do not represent individual farmers, but are averages of the farmer's life style, family size, age and resources. Part of the reaction to the government projects by the farmers of Cartagena and San Carlos would be explained by the farmers' past experience with other projects, their experience with credit, their general attitudes twoard government institutions, the amount of resources at their disposal, their education and traditions.

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[1]USAID, Costa Rica: Agricultural Development Plan, USAID, Wasnington, D.C., AID-DLC/P-916, June 16, 1970.

This section will present a partial view of the task environment in the two project areas.

Profile of the Small Farmer

Cartagena: As far as agricultural activity, Cartagena is the older of the two areas. This is reflected by the smaller sized farms and the fact that most of the farmers were born in the area. Their farms are probably subdivided inheritances. The average farm is 11.9 hectares in size with many holdings less than five hectares.[1]

The average farmer is 44 years old and has been farming for 21 years. He has 4-1/2 years of schooling. Besides his wife there are four children at home; only one of the four helps on the farm. His main source of outside information is the radio. Newspapers are available and 65 percent of the respondents read them occasionally.

Most of the farmers live within the village and work their land, which averages a distance of one kilometer away. In addition to their own land (part of which is rented), 78 percent of the farmers have another source of income. For many, this additional income comes from working as a laborer on one of the larger farms in the area.

Although 47 percent of the farmers feel they are better off now than five years ago, only 33 percent feel that the next five years will be better. This does not mean they are pessimistic, per se, rather it appears they are very traditional in their outlook. Luck is just as important as hard work for getting ahead. They do not feel that the political process will offer any hope of change, since it "doesn't matter who is elected." They believe

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[1]One hectare = 2.47 acres.

the family should stay close together even if it means they or their children give up a good job opportunity elsewhere. They are generally content in the rural environment of Cartagena, especially as they see the cities as being cold and impersonal.

Although most of the farmers have not participated in other development projects, they are no strangers to the use of credit. Only four farmers have not done any institutional borrowing. The average farmer has received credit for 5-1/2 years. There is, however, a relationship between the size of the farm and the length of time the farmer has received loans.

Hardly any of the farmers were familiar with all five institutions mentioned in the survey. The larger farmers were more likely to have had contact with more of the institutions. Most farmers did attend meetings, but were reluctant to talk. It appears that after the initial contact by the development institution, most of the farmers were pretty much left on their own. It may be for this reason that they did not hold a strong opinion (either good or bad) with respect to the institution.

La Fortuna: Among the most recently settled areas is La Fortuna. Most of the farmers came from other areas of the country where they had farmed for eight years before settling here. Since the land was new and there still is land available today, the farms are larger here (31 hectares) than in Cartagena. Only 28 percent of the farms are smaller than 10 hectares, while 23 percent are over 50 hectares in size. Only two farmers said they rented any land.

The average farmer is 48 years old and he has lived

in the area for only the past 20 years. He is not as well educated as his counterpart in Cartagena, having 2.7 years of schooling. However, he appears to be more aware of what is going on, relying on both newspapers and the radio for information. Besides his wife, there are 5 to 6 children at home with one of them helping on the farm.

Most people live on their own farms. This is partly due to the farm's larger size and its distance from town. While most of the farmers in Cartagena had another source of income, in La Fortuna 58 percent of the farmers depended solely on their farm for their livelihood.

Although they have migrated at least once, they nevertheless retain many of the traditional attitudes that characterize their counterparts in Cartagena. What is different, however, is their belief in hard work to get ahead. To better themselves, hard work is more important than either luck or planning. This strong belief in themselves and their work shows itself in their opinion that the next five years will find them better off than they are now.

Again, few of the farmers have had any contact with other government projects, but they have had plenty of experience borrowing, averaging 12 years. They have also had contact with more institutions than the farmers of Cartagena. They have attended meetings and were more willing to express their own opinions. There appeared to be more follow-up activities by the institutions of La Fortuna. It is probably a result of both the low-level institutional skill and the farmers' outspokenness which resulted in their registering a higher level of discontent (31 percent said they had bad experience with MAG) than their Cartagena counterparts.

The Small Farmer Clientele

A number of hypotheses and premises were included in the farmer questionnaire to test these premises against the success or failure of given projects. As noted earlier, it was expected that some of these premises would be better predictors of the likely success of development projects. Future research could concentrate on the more reliable predictors.

One such premise was that farmers respond positively to a project to the extent of their involvement in its formulation and implementation. Our data showed a low level of knowledge of the project by the farmers in the Cartagena area with less than half the sample knowing there was a project. In La Fortuna, all the farmers were knowledgeable of the project. A related question concerned how the farmer found out about the project. In Cartagena the 14 out of 35 farmers who knew of the project could answer only in general terms. In La Fortuna all 25 responded and most named the person or organization contacting them. When asked the objectives of the project the answers reinforced the conclusions drawn from questions one and two. Seven of the 35 farmers in Cartagena could state one or more of the project objectives, while 19 of 25 farmers in La Fortuna responded with specific project objectives. The evidence is clear that MAG personnel were not getting information to the Cartagena farmers as contrasted to the La Fortuna project where an excellent information take was evident. We tested the above observations against responses of the farmers' trust in various institutions. In Cartagena 51 percent of the farm

sample said they had no experience with MAG personnel. In La Fortuna all the farmers had direct relations with MAG, however, many of them had poor experiences with MAG. Some complained of the level of technology offered, others of the unprofessional training of the change agents who were supposed to help them. One farmer said it in these words: "He [the MAG agent] ought to learn to dance before he gets on the dance floor."

Our questionnaire tested many other hypotheses and premises assumed to be related to the success or failure of the projects. We looked at local administrative and political leadership and the political articulation of the farmers. We tested a change-proneness index of farmers attitude, as well as the farmers' aspirations. It is not the purpose of this report to itemize and analyze the responses of all these questions, but to give the reader a sense of the adequacy of the farm-level module in highlighting farm characteristics. These characteristics were then compared to the institutional form of operation serving this agricultural sector to determine the nature of the "fit." The report asked the farmers' opinion of the two projects. We shall now summarize these opinions before studying the institutions serving the two projects.

Farm Opinion Survey

As to their opinion of the project, 24 of 35 farmers in Cartagena gave no answer; six gave a generally favorable response; three were noncommittal, and two were negative. In La Fortuna three answers were positive, seven conditionally positive, one mixed, ten negative, two gave

their recommendations. This type of response to this question is a key to the involvement of these farmers in future projects, especially with MAG and with the Counsel of National Production (CNP). La Fortuna farmers' criticisms were candid and explained why they were unhappy. They also said why they liked the project. If these replies were fed into MAG as flowback information, corrective action could be taken.

They criticized the inadequacies of the research on which fertilizer recommendations were made. Some felt the project was poorly administered, others criticized the lack of agent expertise, others liked the project, especially the machine inputs. Still others were dropping the project because the drought had resulted in corn crop failure.

A follow-up question asked "Who has asked you for your opinion of the project?" In both Cartagena and La Fortuna it was clear that no one had made a systematic attempt to get the farmers' opinion nor had the farmers offered their opinions, except perhaps to a neighbor. The one-way flow of information from the national offices to the farmer clientele was clearly the pattern in the two projects.

The Farmer's Perception of His Problem

If a program or project is to be willingly participated in by the small farmer, he must perceive the project as meeting some of his needs in his priorities. So we asked the farmer what were the biggest problems in the agriculture of his zone. The small farmers of Cartagena

listed drought as their number "one" problem with 26 of 35 so responding. But many responded that in addition to droughts they were overrun with plagues of insects. Six mentioned diseases as a major problem with only one or two mentioning lack of credit and technical assistance, worn out or unavailable land, and invasion of weeds. We then asked what was the biggest problem you have. In Cartagena the small farmer saw his problems nearly the same as those facing all farmers in his zone. Seventy-five percent gave the drought as the number one problem.

In La Fortuna, the problems were quite different. La Fortuna is in a region of high rainfall although crop failures due to drought are not unknown as mentioned in Chapter One. Seventeen of the 25 farmers gave climate as a major problem for agriculture; some years it was too wet, others too dry. Insect plagues were listed next in order of seriousness with lack of roads, bird infestations, corn spoiling in the field due to too much rain at harvest time, and lack of storage. As we turned to the question of the farmer's own problems, they largely paralleled the regional problems. He mentioned that too much or too little rainfall was the number one problem. He related this to the project with its high costs of land clearing, fertilizers, herbicides and machinery costs. He noted that the project costs were high and his returns low because there was not much production due to the drought. One farmer was critical of the late arrival of the fertilizer. The second problem listed in importance was plagues of insects, worms, etc.

Such problems are those of an agriculture at the

mercy of climatic elements and insects, diseases and pests. It is an agriculture largely devoid of organizational structures and services that would lessen climatic risks, as well as losses from diseases and insects. It is an agriculture hindered by lack of all-weather roads and family facilities for education, medical needs and health.

The previous data gave us information as to the small farmer's human and physical resources, his opinion of governmental institutions and his perception of his major problems. We will use the communication module to study the farm agent that works directly with the farmer. We use the term "change agent" in a broad sense to refer to those representatives of the agricultural institution whose work, at the local and regional levels, places them in direct contact with the farmers in the implementation of the institution's program. This module will give us information on effectiveness of the regional organization as well as some insights on information flows from the farm to national level.

Communications Section

Effective communication channels with adequate information flows are necessary for the successful administration of agricultural development projects, both within the agricultural institution and between the institution and its clientele.

In the communication module we attempted, with a limited sample, to assess the communication flows in the various institutions, between levels at the national headquarters; from headquarters to regional or field operation;

from field respresentatives of the institution or change agents to its farm level client system. At the local or farm level we attempted to assess the linkage between institution and client system in two ways: (1) the change agent's reports of his communication with the farmer; and (2) the farmer's perceptions of his contacts with the change agent.

A questionnaire to measure communication behavior was developed and pretested in March, 1972, in collaboration with IICA personnel in Costa Rica. Field work was carried out in Cartagena and La Fortuna in lat August and early September, 1972. Personal interviews were conducted with 10 local change agents and two regional change agents working in Cartagena, and with seven local change agents and two regional agents in La Fortuna for a total of 21 interviews. For the Cartagena project, the two regional change agents were the regional director for the Ministry of Agriculture (MAG) and a MAG regional grains specialist; for the La Fortuna project, the regional change agents were the regional director and a MAG soils specialist.

Change Agent Communication with Farmers

In attempting to measure change agent contact with the client system and the farmers, we asked each agent what percentage of his total time was spent in direct contact with farmers. No significant differences were noted between regions. The Cartagena average was 74 percent of the agent's time in contact with the farmer, while agents in La Fortuna reported 72 percent of their time in contact with farmers.

We asked the change agent to estimate how his time spent with the farmers was divided among large, medium and small farmers. The averages are as follows:

TABLE I

Change Agent Time Use Estimate

Time spent with	Cartagena (percent)	La Fortuna (percent)
Large farmers	9	13
Medium farmers	37	30
Small farmers	54	57
N =	12	9

We asked where the contact took place--whether in the agent's office, on the farm or through mobile school activities.[1] The results are:

TABLE II

Agent's Place of Contact

Place of contact	Cartagena (percent)	La Fortuna (percent)
Agent's office	15	18
On the farm	84	82
Mobile school	1	0
N =	12	9

[1] In the region of the Cartagena project a mobile school and a mobile bank were utilized for this project and others. The school was to be used to bring technical information to the farmer, the bank to facilitate making credit available to the farmer.

We asked the change agents which communication method they used in reaching the farmers and about how frequently they used each. We found that personal conversation with the farmer is, by far, the dominant mode of communication. This holds for both project areas. Meetings with farmers are held more frequently in La Fortuna than in Cartagena. Half the agents working with the Cartagena Project never hold meetings with farmers. About half the agents in each region make use of demonstrations. At least half of the change agents made no use of any of the mass media methods. Agents in Cartagena appear to make slightly more use of the mass media than do those in La Fortuna.

We also asked the agents which communication method they felt was most effective. In Cartagena, half felt personal conversation was most effective; another quarter cited demonstrations and each one mentioned mobile school, leaflets and radio programs. In La Fortuna, four agents favored personal conversations and meetings and one each mentioned demonstrations and films.

Change Agent Perceptions of Client Needs

Effective communication between change agent and farmer should lead to improved change agent perceptions of farmers' needs. We gathered the following data on change agent perceptions of farmers' most serious problems. In the next section of this report, we will look at the farmers' expressed needs and compare agents' perceptions with farmers' expressions.

TABLE III

Agent Perception of Most Serious Problem

	percent	
	Cartagena	La Fortuna
Natural (physical) problems	8	0
Lack of land, resources	25	0
Inputs: seeds, fertilizers, etc.	8	11
Credit	17	22
Lack of technical assistance	8	0
Lack of communication	17	11
Lack of education	17	37
N =	12	9

As can be seen in Table III, the lack of land and resources were most frequently cited by Cartagena change agents while the farmers' low education levels were most frequently mentioned in the La Fortuna area.

Clientele Communication

In the previous section, we looked at change agent reports as to frequency of their communication with farmers. In this section, we examine the farmers' reports as to their frequency of contact with change agents.

Questions were included in the "Small Farm Questionnaire" which dealt with farmer contact with change agents. The questions dealt with: number of conversations with the change agent, whether the farmer could identify the location of contacts with the change agent, usual subject of discussion, whether he

reads change agency pamphlets, and whether or not the farmer attends meetings of the institution.

Cartagena Project: Farmers report most frequent contact with BCR (Bank of Costa Rica). This holds up across number of conversations, ability to name the extension

TABLE IV

Farmer Communication with Change Agents

	Cartagena			La Fortuna		
	MAG	CNP	BCR	MAG	CNP	BAC
Average number of conversations with agent in past year	.77	.11	2.29	4.58	3.30	4.26
Can name agent	26%	26%	35%	65%	39%	20%
Usual contact						
meetings	20%	---	8%	20%	---	
office	---	3%	---	---	5%	20%
home/farm	8%	---	29%	30%	30%	25%
Usual subject						
Ag general	20%	3%	40%	60%	25%	15%
Ag technical	3%	---	9%		---	10%
Institutional procedures	---	---	23%	15%	45%	75%
Operational procedures	---	3%	---	5%	---	---
Other	---	---	9%	5%	5%	---
Read pamphlets	41%	3%	12%	60%	20%	12%
Attendance at meetings						
Some meetings	6%	---	---	55%	25%	40%
All meetings	17%	3%	9%	40%	20%	25%
Number of respondents		35			20	

agent, specific location of contact mentioned, and specific subject of conversation indicated. Farmers do report greater reading of MAG pamphlets and higher attendance at MAG meetings.

Looking at the overall results, communication is not very high. At best, only about one-third of the farmers can identify the institution and name its extension agent. At best, less than 40 percent can cite the location for a specific conversation with an extension agent of one of the institutions. Less than one-quarter report attendance at meetings for a given institution.

Looking at the data differently, we found that of the 35 respondents in the Cartagena sample, 12 could name at least one extension agent from one of the three institutions; seven farmers could name agents from two institutions and one farmer knew the name of the agents of all three institutions. Thus, over half (57 percent) could give the name of at least one extension agent.

La Fortuna Project: The initial impression of the La Fortuna sample is of a considerably higher level of contact between farmers and institution extension agents than with the Cartagena Project. This holds true for number of conversations, ability to name the change agent and topics discussed. It also applies to institutions across the two project areas. In the change agent section, we noted that the change agents in Cartagena reported about the same amount of contact as those of La Fortuna.

Farmers report most frequent contact with MAG agents, although BAC (Banco Anglo de Costa Rica) is a close second on several of the measures. What is perhaps most

noteworthy is that 65 percent of the participants can name the MAG agent, 60 percent report reading MAG pamphlets, and 95 percent claim to attend some or all of MAG-sponsored meetings.

Looking again at the extent to which agent contacts are overlapping, we note that seven farmers can name only one of the extension agents, five farmers can name two agents and three farmers can name the agents from all three institutions. Thus, overall, 75 percent of the farmers can name one or more extension agents.

It is also interesting to note that participants tend to discuss mainly agricultural programs with MAG agents, but are more likely to discuss institutional procedures with CNP and especially with BAC agents.

Farmers' Report of Their Most Serious Problem

Referring back to the "Change agent perceptions of client needs" section of the Communication Module, we now

TABLE V

Rank Ordering of Most Serious Problems Faced by Farmers

Cartagena		La Fortuna	
Agent	Farmer	Agent	Farmer
1. Lack of land, Resources	1. Drought	1. Education	1. Climate
2. Credit*	2. Plagues	2. Credit*	2. Plagues
3. Communication*	3. Disease	3. (Other)*	3. (Other)
4. Education*			

*tied in ranking

compare change agents' perceptions of the farmers' most serious problem with their own reports.

The most obvious conclusion is that farmers tend to define their problems in specific terms of drought, plagues and climate. Agents tend to see broader, more abstract problems, such as communication, education, and availability of credit. This tendency is somewhat more pronounced for La Fortuna change agents than for those of Cartagena.

Regional and Local Institutional Communication

Of the institutions, only MAG maintains regional offices in the two project areas. The MAG regional office for the Cartagena project is located in Liberia, about an hour drive from the project site. The regional office which supervises the La Fortuna project is at Ciudad Quesada, about two hours from the La Fortuna project. Of the institutions, only MAG and the Banco de Costa Rica had any significant involvement in the Cartagena project; while MAG, the CNP, and the Banco Anglo were actively participating in the La Fortuna project.

Change Agent Communication with His Own Institution

It is difficult to obtain precise measures of the amount of communication a change agent has with the higher echelons of his organization and to interpret what these amounts may mean.

A gross measure of communication is the number of visits someone in higher echelons makes to the field as well as the change agent's own visits to these people at their offices. The average amounts for each region of this kind of contact is as follows:

TABLE VI

Frequency of Personal Visits

Type of Communication	Cartagena	La Fortuna
Someone from regional office visits agent*	weekly	weekly
Someone from San Jose office visits agent	once a month or less	several times a month
Change agent visits regional office*	several times a month	weekly
Change agent visits San Jose office	once a month or less	several times a month

*MAG is the only institution with regional offices imposed between San Jose and local field operations.

There is some tendency for agents working in La Fortuna to make more visits to regional and national offices and to receive more visits from the San Jose offices than the Cartagena agents.

In Cartagena, a third of the agents were satisfied with the frequency of visits they received; the rest would have liked more contact with their supervisors. In San Carlos (La Fortuna region), two-thirds of the agents were satisfied with the amount of supervisor contact; the rest would have liked more contact. In Guanacaste (Cartagena region) over 80 percent and in San Carlos 78 percent of the agents were satisfied with the content matter of their visits with supervisors. Only one agent made a specific recommendation for improving content--he wanted more discussion of technical matters with his supervisors.

National Level

Questions about communication within the institution at the national level and between the national level and the two projects were included in the intra-institution questionnaire.

Communication at National Level: While data were collected from eight institutions, we will limit our discussion to the three actively involved in the Cartagena and/or La Fortuna grain projects. These were: Ministry of Agriculture (MAG); the National Production Council (CNP); and the Banco Anglo of Costa Rica (BAC). The Bank of Costa Rica was the credit institution most involved with the Cartagena Grain Project, but it was not included in the sample of institutions whose national headquarters were studied.

Questions were asked of each respondent concerning frequency of communication with superior, satisfaction with communication with superior and satisfaction with communication with subordinate. The data are summarized as follows:

TABLE VII

Communication at National Level

Average	MAG	CNP	BAC
1. Frequency of communication with superiors	6-10 times/ week	15 times/ week or more	1-5 times/ week
2. Percent satisfied with communication with superiors	57%	100%	44%
3. Percent satisfied with communication with subordinates	48%	58%	33%
Number of respondents	21	12	9

There is a clear relationship between frequency of communication with superiors and satisfaction with communication. These give us some gross indications as to the general communication climate of the organization. It is also noteworthy that CNP appears to have most active communication channels, followed by MAG, with BAC last.

Respondents were asked what they considered the most serious problem of internal communication in their own organization. MAG personnel most frequently mentioned the difficulty of communicating along hierarchical lines. CNP personnel cited technical and physical problems. Three problems were given by Bank personnel: technical problems, poor understanding, and difficulty with hierarchical lines.

Communication and Agreement

We paired individuals with their superiors and divided the sample into pairs (dyads) that had high communication (oftener than once a day) and low communication (once a day or less). We then looked at the data relative to statements about doctrines, goals, problems, and achieved objectives of the institution.

We then matched responses between individuals and their superiors and calculated a percent of agreement. On some variables one or the other member of the dyad did not respond to the question so the number of dyads varies from variable to variable.

Dyads with high communication agreed to a greater extent than those with low communication on: the doctrine of the institution, the goals of the institution and the perception of the most serious problem of the institution.

TABLE VIII

Relationship of Communication with Superior
To Agreement with the Superior

Agreement with superior on:	High Communication		Low Communication	
	Percent	(n)	Percent	(n)
Doctrine of organization	58	(24)	24	(21)
Goals of institution	50	(26)	33	(21)
Perceived agreement of goals	64	(25)	50	(20)
Accuracy of perceived agreement	57	(23)	44	(18)
Perception of most serious problems	26	(23)	20	(20)
Proposed solution to problem	26	(23)	30	(20)
Accomplishment of objectives	44	(25)	55	(22)

They also perceived themselves to be more in agreement with their superior than those of low communication and the perception of their agreement was more accurate. That is, when they said they agreed with their superior on institutional goals, we checked their superior's responses and calculated the percentages of actual agreement.

Dyads with low communication agreed more than those with high communication on the proposed solution to problems and the extent to which the institution had accomplished its objectives.

Headquarters Communication with Projects

As noted in an earlier section, the number of persons in the institution headquarters who knew about the Cartagena and La Fortuna projects, relative to total sample, was small. Only five respondents in MAG had knowledge about the Cartagena project: none from CNP or BAC knew about it.

Cartagena Project: Our sample of MAG respondents included four members of the Extension Division: the Director, Sub-Director and two technicians. Three of these had knowledge of the Cartagena Project (one technician appeared to have no knowledge). Of those who knew about the project, two of the three had communication relative to the project at least weekly with the regional office in Liberia. All felt there should be more communication and one responded there was "too little time spent in communication for so many and so varied activities."

This is significant because, if there is one division of MAG that should know about the project and be in communication with field operations, it is the Extension Division.

La Fortuna Project: The communication pattern for the La Fortuna Project is similar to that of Cartagena, except that there are individuals in CNP and BAC who know of the project and are in communication with their institution's change agents in the field.

The similarity lies in that the average communication for individuals in each institution, is about once a week, and there is a consensus that there should be more communication.

Discussion and Conclusions

In this section, we comment not only on the data we have presented, but also on our observations and other information gleaned in the course of collecting the data by interview.

1. There are some apparent contradictions in the data. From MAG agents in Cartagena, we received a picture of considerable MAG activity and communication with farmers in the Cartagena project area. Nevertheless, as we talked with agents of the Banco de Costa Rica who had written the loans for the Cartagena project, we were told that MAG agents were doing very little in Cartagena. The data from the farmers themselves indicated more contact by BCR change agents than by MAG agents.
2. There is some indication that the communication links operate more frequently in La Fortuna than in Cartagena. There is also indication that the MAG regional offices produce a better communication flow than is true of the other institutions where the local agent reports directly to a central office in San Jose.
3. We found there is considerable communication about the projects from the local office to the regional office within MAG, but not much project-related communication from the regional to the national offices. Within MAG, there is almost no project-related communication from the local to the national office. Similarly, little communication about the projects passes between local and

national offices in the case of the other institutions.

Intra-Institution Status Role Study

This section or module of our study looks within those institutions serving the small farm development projects of Costa Rica. Our team questioned top administrators, middle managers and subordinates as to institutional doctrines, work objectives, change-proneness of personnel and what they considered most needed changing in the organization. We tested these 80 respondents from eight institutions as to their knowledge of the Corn-Rice project of Cartagena and the Corn project of La Fortuna and their estimation as to how well their institution carried out its responsibilities for these projects. The purpose of this module was to understand the nature of present institutions and subunits of the organization having to do with the small farm projects. We sought to identify major institutional problems such as lack of planning, goal conflicts at different organizational levels or informational blockages that caused institutions difficulties in implementing small farm projects.

How the Study was Organized

Our original intent was to study a single Costa Rican agricultural organization in depth. However, the arrangement could not be made, so a multiinstitutional study was done instead. Stretching the same available research time and budget over more institutions caused some loss of detail in our data with a loss of clarity on some institu-

tional problems and blockages. Perhaps most critical of all was the fact that we were forced to use a hand-carried or mailed questionnaire for this sensitive within-institution study rather than the personal interview method deemed superior for this type of research. This research instrument and its manner of administration will be evaluated in more detail in Chapter Three.

What Was Found

The research showed a lack of agreement on organizational work objectives between peer, subordinate and supervisory personnel. Further questions indicated most of the respondents believed their supervisors, subordinates and peers shared the same views as their own. In other words individuals sampled were not aware of any problem since they thought everyone was in agreement about the work objectives of their institution. A later question brought out the information that 66 percent of the respondents stated their institution had accomplished the activities most important in achieving last year's objectives. In summary, there is a lack of agreement on organizational objectives, and yet 66 percent believe their organizations are accomplishing their objectives.

The team used a related series of questions to determine the doctrine or philosophy of the organization as articulated by respondents. This concept of doctrine helps identify what an organization stands for, what it hopes to achieve, how one organization differs from another when serving the same clients. One out of five did not respond as to the doctrine of their organization and when they

responded they tended to confuse work objectives and doctrine. When asked the difference in doctrine between their organization and others, over half those responding said there was no difference in doctrine. One might conclude from the above information that the respondents work in a given position because there is a job. Neither they nor their peer workers, subordinates or supervisors have discussed and certainly not agreed to the work objectives of their organization. The respondents could not identify how their institution differed from others. As such it is quite unlikely that the respondent has a sense of commitment to the institution, its objectives and the clientele it serves.

Our research approach used the two agricultural projects as tracers of institutional characteristics at the national as well as regional and local level. At the national level we found few officials knowledgeable of the projects. Only seven out of the 80 officials questioned knew about the Cartagena Corn-Rice project and 18 out of 80 knew about the La Fortuna project. Within MAG, all extension personnel knew about the two projects and could specify some of their important objectives. But the planning office personnel of MAG did not know of the projects. The fact that 53 percent of the Banco Anglo officials questioned knew about the La Fortuna project and its objectives was surprisingly high.

It is not too surprising that a knowledgeable response to the question on projects was so low. Half the institutions interviewed were only minimally involved in the two projects. The fact that most officials at various levels

in MAG, CNP and the Banks furnishing the farm inputs were not aware of the small farmer projects indicates the level of difficulty in making those institutional changes deemed necessary for implementing small farmer projects.

Our team questioned these officials on the additional opportunities open to their organizations to serve the agricultural sector. A high percentage of subordinates and supervisors mentioned technical assistance but the ambiguity of their answers leads us to conclude that this was a safe answer, not an evaluative assessment. Responses oriented to improve management, e.g., increased coordination and cooperation, came from individuals who occupied higher positions in the organizations. On the other hand, answers dealing with other improvements for the institution tended to come from those occupying positions lower down in the hierarchy.

Proneness to change represented another major variable to be studied within the agricultural organizations in Costa Rica. There was a general tendency to perceive immediate supervisors as being less prone to change. Detailed analyses revealed pockets of response which ran counter to this generalization. For example, most respondents in MAG see their immediate supervisors as being quite rigid to change, while those in MAG's extension division see their supervisors as open to change.

The last two questions on the questionnaire were open-ended and sought information dealing with the most serious problem of their organization and the most important change needed to increase organizational efficiency. Many did not respond but of those responding, twenty-six persons repre-

senting five different organizations mentioned lack of financial resources. Another eight spoke of political interference or political instability. Five persons representing three organizations mentioned excessive turnover of personnel and another four cited shortage of personnel.

When we look at the listing of suggestions for improving the effectiveness of organizations, we get a different listing of priorities. First priority goes to changes in organization, e.g., reorganization. The reduction of political influences and pressures tied for second place with gaining additional financial resources. By and large, there is some lack of agreement between perceptions of problems and suggestions for improving organizational effectiveness.

The extension division of MAG was vitally involved in the two agricultural projects studied by our team. A comparison of perceptions of problems and remedial suggestions of the extension personnel revealed no consensus. It became apparent that those who responded seemed unable to conceptualize problems adequately or to relate problems and solutions.

Institutional Interface Module

Rationale

Current organization theory and research are focusing on the environment in which organizations function, the key linkages, interfaces or interdependencies it has to maintain and how it deals with the contingencies and constraints which these task environment elements create. Internal organization structure and function are now seen

to be heavily dependent on the kinds of pressures and problems the environment presents.

A turbulent, rapidly changing task environment calls for a nonbureaucratic organization structure and strategy. Internal management styles are, thus, prescribed by the environment in which an organization finds itself. To assess the effectiveness of management at all levels in an organization it is necessary first to understand the interface or linking pressures.

It is difficult, if not impossible, to prescribe changes in the internal organization--and even to evaluate that organization adequately--without an understanding of task environment pressures. Therefore, the starting point in any comprehensive study of the effectiveness of any organization must be the environment and its impact in the organization through linkage or boundary-spanning positions.

How the Study Was Done

The study of the linkages between one organization and other institutions in its task environment was constructed by means of a series of interviews starting with top management. The National Production Council (CNP) was initially selected as the focal organization. After arriving in Costa Rica, however, we learned that entry into CNP was not possible. Given the limitations of institutional entry and field research time, a modified series of interviews was conducted which discussed the Ministry of Agriculture (MAG). Additional interviews took place with two key leaders of CAN (The National Agricultural Council), and one executive officer in each of CNP and the National Bank of Costa Rica.

Three questions were asked of interviewees: what do you see as the mission or goals; what is your job and how does it relate to these goals; and, what limitations, barriers or problems do you experience in carrying out the responsibilities of your job? Respondents included: (one) for MAG, the Directors of Operations, Administration, Forestry and Fisheries, Research, Agricultural Extension, Planning and the Assistant Director of Meat Products;(two) for CAN, the Executive Secretary and his Assistant;(three) for CNP, one executive; and (four)in the National Bank (one executive).

Each interview was conducted in an informal, unstructured manner, allowing each respondent the opportunity to fully express his thoughts relating to the three major questions.

Result

A number of interesting themes recurred in several of the interviews.

1. From outside MAG the main criticism was that it was not exercising strong enough leadership in promoting the goals of CAN.[1]

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[1]The Consego Agropecuario Nacional (CAN) National Agricultural Council was established in September 1970. CAN was created by the Costa Rican government as a precedent to the disbursement of the AID loan and was assigned a coordinating function for the loan. CAN is composed of representatives of selected public and private institutions and organizations and is presided over by the Ministry of Agriculture. In March of 1971, the CAN authorized the creation of regional agricultural committees

2. Some of the interviewees, both inside and outside MAG speculated that perhaps the nation's top political leader was not strongly behind the goals of the small farmer program.
3. Both inside and outside MAG, the people interviewed were almost all aware of the mission of CAN, the small grain support programs of CNP and the general objectives of helping the small farmer in Costa Rica. They saw their own organization and, in most cases, their own jobs as related directly to improving the lot of the small farmer.
4. Within MAG, the most frequent criticism had to do with the lack of coordination between the different sections. At the same time, the fact that under the regionalization program the head of Extension in the field would head up the local program (the CAN citos), was seen with mixed feelings. Coordination was seen as necessary, but few people felt that the head of a CAN cito should automatically be the representative of the Agricultural Extension section. Instead, the best person in the field should be chosen, whether he were from research, forestry or whatever.

(CAN Citos). Each committee is composed of regional delegates from the agricultural institutions and some of the farmers from the region. The CAN, and within delegated powers the CAN citos are to make policy, approve and decide priorities for individual projects. The details of implementation are left to the project coordinator and field representatives of the responsible institutions.

5. Two respondents said little could be done to reform the organizational structure of MAG until supervisory personnel with high political connections retired.
6. One minor but rather interesting problem results from resentment within MAG of the more favored status of CAN employees. CAN employee's salaries exceed those of comparable MAG employees and on occasions, MAG--which handles the CAN payroll--has found it impossible to pay CAN employees on time. In fact, delays of a week or more have occurred. This is attributed by CAN employees to jealousy of higher pay and more favored status.
7. One member of MAG made the following statement which was recorded and passed on. It suggests a potentially serious problem but one which could not be assessed without more evidence:

> Until 1969, this organization was stable, static. Since then, we have more than doubled in size due to AID/IICA. But recently, we have had a 30 percent cutback (in funds). Since we can't cut back salaries or fixed charges, we are cutting back the only place we can--on our dynamic new programs.

8. Another quotation from one interviewee within MAG not mentioned by other interviewees in MAG may indicate a related problem:

> Our big problem is that all our directors haven't really agreed to the goal of helping the small farmer.

This module was only briefly studied in the field as compared to the small farmer, communication, and within

institution modules. However, it did prove useful in bringing to our attention the top administrator's conception of his institution's goals, his work and the problems, challenges and frustrations he faced in carrying out his responsibilities. This information served as a check on data secured with our other modules and gave us data on interinstitutional relationships not found elsewhere.

Leadership Characteristics of Institutions

As we pointed out in Chapter One, this admittedly important element was not carried out in our study of public agricultural institutions in Costa Rica. Administrative sensitivities in Washington denied us entrance to collect data on leadership characteristics. We believe the loss of data and testing of this module a serious blow to our overall analysis and remedial research approach. We recommend that any further testing of our overall design should include this section and so we have included a description of procedures we propose using to test this module in Chapter Three.

Systemic Institutional Linkage Module

Within any group of interrelated institutions constituting a sector's network of institutions there are some which have more influence than others. Identifying the nature and strength of these linkages is a formidable task. Nevertheless, it is a crucial one if the power relationships among institutions are to be understood so that the network can be influenced with a minimum of resources to evolve from a traditional to a modern one.

If, for example, a point of entry into an institutional network is selected which is an inconsequential institution with little influence on others in the network, little leverage for transforming the network is obtained. On the other hand, if the institutional point of entry is the dominant one in the network, the multiplicative effect of modernization of this institution can have appreciable impact on others in the network, on the sector involved and then on the entire national development process. Since resources are inevitably scarce for modifying institutions the selection of critical points of entry is of utmost importance.

The Systemic Institutional Linkage Module was designe to deal with this problem of identifying high payoff institutions for the allocation of assistance resources.

Sociometric Instrumentation

The initial criterion used to identify interinstitutional linkages was the question: "What institution does your institution deal with in carrying out its program?"

The second criterion utilized to measure the relative strength of the linkages was: "How important are the following institutions to your institution in carrying out its program?"

Institutional spokesmen were directed to check the appropriate cells in order to rate both the frequency of contact with and importance to their institution of every other institution listed. Each rating referred to a discrete point on a high-low (3-2-1) continuum reflecting 1) frequency of interaction a d 2) importance of interaction.

In addition to obtaining information about the frequency of contacts and the importance of other institutions on the responding institution, data were obtained concerning changes in both of these. That is to say, information was obtained concerning whether or not contact was made with other institutions more frequently, less frequently, or about the same frequency as in 1970. Likewise, respondents were asked to indicate whether the other institutions had more, less or the same amount of importance with regard to their institution's program as previously.

These data were obtained in order to attempt to gain some insight into the dynamic nature of linkages. Theoretically at least, linkages are not static, although their changes may be described as accretionary. Hence, in an effort to obtain insights into the rate of change of linkages, respondents were asked to make comparisons between the two time periods.

In Costa Rica the dynamic nature of linkages in the agricultural sector appears to be of considerable significance at this point in time. The reactivation of the National Agricultural Council (CAN) was premised on the basis of a lack of adequate linkages among institutions. Consequently, if changes in the interrelationships among institutions are occurring as a consequence of CAN, these changes should be observable in the responses of institutional spokesmen.

Analysis of Data

Due to a shortage of resources, data were obtained only for a subsample of nine institutions. Each was con-

sidered representative of a strata of the entire network.

The Ministry of Agriculture was the only institution indicated by as many as eight respondents as frequently contacted by their institutions. Two institutions, the Central Bank and the National Bank of Costa Rica, were frequently contacted by seven of the institutional spokesmen.

Another indication of the influence of the Ministry of Agriculture was provided when it appeared in the group mentioned by the largest number of respondents as being very important to these institutions' program of work. Other institutions included in this important group were the Central Bank and the Ministry of Finance.

A further indication of importance is the change in frequency of contact among institutions over time. In the case of Costa Rica, the base year was taken as 1970, the year prior to the Agricultural Sector Program. Again, the Ministry of Agriculture shows its importance by being the only institution mentioned as frequently as six times as being contacted more frequently than in 1970. The other institution of increasing importance during that time period was the National Production Council, selected by five other institutional spokesmen.

As above, the Ministry of Agriculture was listed by most institutional spokesmen as increasing in importance to their institution since 1970. Clearly, for the institutions in the subsample, the Ministry of Agriculture was the most important institution in the sector network, both in terms of frequency of contact and importance of contact.

Given this dominant position in the sector's institu-

tional network, the Ministry of Agriculture appeared to be the logical institution to analyze in the most depth in application of the modules in the research approach formulated in this inquiry.

Chapter III
AN EVALUATION OF THE MODULAR RESEARCH APPROACH

In Chapter Two we presented a summary of findings from the research modules, along with some of their implications for action by the institutions concerned. It is our contention that these results demonstrate the utility of the modular approach, and that the approach can provide guidelines for action programs. Our results suggest, for example, that the institutions involved in the two projects in Costa Rica need to get more participation by the farmer clientele earlier in project planning and development; that steps need to be taken to provide for more adequate project-related communication between central headquarters and the field offices of the agricultural institutions; that personnel within the institutions need more careful orientation to the goals and objectives of the institutions and their project; and that the creation, by fiat, of a coordinating agency among Costa Rican agricultural institutions has by no means solved the problems of coordination that existed.

These kinds of findings and recommendations lead us to conclude that the modular research approach can be effective in identifying operational and organizational problems associated with programs of agricultural development. In this chapter we will discuss some of the problems related to the conduct of the research itself, and offer some recommendations that we feel would make the modular approach more effective in future applications.

Turning first to some of the problems we experienced

Research Problems Encountered and Adjustments Made

1. The modular approach was originally designed with the intention of applying it to the study of a single institution. However, in order to gain entry into the Costa Rican agricultural sector, we were obliged, by political and policy pressures, to expand the study to all the institutions under the purview of CAN. This meant that time, energy and resources which had been originally committed to the study of a single institution had to be revised and redistributed to take into account a multiplicity of institutions and their interrelations. We feel that, given available time, energy and resources, this was a mistake and weakened the test of the modular approach. We believe that a more adequate test of our approach would have been provided had we been able to concentrate on a single institution. Because MAG is the focal institution of the agricultural sector, the majority of our data did come from its activities, yet the requirement to include other institutions was a debilitating diversion which diluted the overall test of the modular research strategy.

   Take, for example, the Intra-Institution Status Role Module. In retrospect, we believe we would have learned more had all of our 80 interviews been conducted with MAG personnel rather than spread over eight different organizations. A more coherent picture of MAG could have been obtained and the use of statistical tests would

then have become more appropriate.

2. The focus on a single institution might also have eliminated a second methodological problem which, we believe, adversely affected the Status Role data. The research design developed by the MSU team called for the collection of the status role data by personal interview on the grounds that this was the most reliable technique for gathering these kinds of data. The IICA research group regarded the personal interview as too time-consuming and suggested group interviews, and the group technique was used for pretesting the questionnaire. However, when the actual data collection was carried out by the IICA team, copies of questionnaires were hand carried or mailed to each respondent with the request they be completed and returned within a 24-hour period. We believe that the "no response" rates would have been lower and more meaningful data would have emerged had personal interviews been conducted. Such an approach would have been facilitated by a single-institution research focus.
3. A third problem relates to the fact that different research team members spent different amounts of time in the field collecting data. This was a multidisciplinary approach, with faculty members from different university departments who had to gain release from other teaching and administrative responsibilities in order to spend time in Costa Rica. The amount of time the faculty mem-

bers were able to devote in Costa Rica for the actual collection of data for their particular modules varied from a week to two months. This indicates that there were substantial differences across modules, either in the amount of data gathered or in the amount of direct supervision in the collection of data. It should be noted that a graduate student did spend five months in Costa Rica collecting data for the farmer clientele module, and he also assisted with the collection of some of the communication module data.

4. A further limitation of our test of the modular approach results from the fact that it was not possible to test the Leadership Module in the Costa Rican context. Our team member responsible for the leadership module was denied entrance into Costa Rica to collect data on leaders and leadership in Costa Rican agricultural institutions because of sensitivity about the problem in Washington. This was a most unfortunate development. Theoretical conceptualizations of institutions as well as our own rationale for the interworking of our modules stressed the importance of the leadership function. Obviously it is impossible to carry out a thorough study of an institution if one is denied access to data on its leadership.

Research Improvement Suggestions

Another set of issues deals with modifications and improvements on the modular research approach. Given our

experience in one field setting in Costa Rica, how would we do things differently the next time we were to mount a similar study?

1. Again, because of schedules and the requirements of other activities, we did not place a high priority on the order in which data were gathered for the various models. Instruments were pretested in March, 1972, and the data gathered at various times between April and November, 1972. We do not have conclusive answers as to the ideal order for collecting the data or how the collection of data for one model might influence or contribute to the collection of data for other models. We can venture some guesses.

   The ordering of the data collecting for the various modules should take into account questions such as the following: Will data collected for one module facilitate the data gathering for other models? Are there questions in the questionnaire of certain modules such that, if asked, might bias responses made to other questions related to other modules? Are there questions of such a sensitivity that, once asked, might create resistance to further data collecting efforts? It is evident that these considerations are similar to those that determine the ordering of questions within a single research instrument. Indeed, the modular approach can be viewed as a single research instrument with several sections, and the ordering of those sections must satisfy the same criteria for question

ordering that would apply to the development of any research instrument.

One question which might influence the order of data collection would be the amount of information about the institutional framework the research team had prior to entering a new system. Does the team know the institutions well enough so it can identify the institution of study before entering the system? This may turn out to be a research question in itself: which institution is the most central or relevant for purposes of the study? If this were the case, the Systemic Institutional Linkage Module might be a logical first step. By means of sociometric analysis, it identifies the relevant institutions and gives some indication of which institutions appear to be most relevant for the functioning of the system. On the other hand, if the research team has sufficient knowledge of the institutions which compose the system, it may be possible to forego entirely the Systemic Institutional Linkage Module.

The Institutional Interface Module assumes interviews with top management. Therefore this is a module which, for political reasons, should have an early place in the data collecting schedule. By giving top management some first-hand acquaintance with what the study is about, it may provide a useful contact in opening other doors later on. In addition, the perceptions of top

management as to the mission or goals of the institution may provide useful clues for structuring questions along similar lines for the Intra-Institution Status Role Module.

There would seem to be no logical necessity for ordering the data collecting for the Intra-Institution Status Role Module, the Communications Module and the Small Farmer Clientele Module. Communication items are, in fact, included in the other two modules and the Change Agent questionnaire would not seem to present any problems to the other two. All data for all modules should be collected within a relatively short time span so that all respondents have essentially the same temporal reference.

Because of the sensitivity of organizations to questions related to leadership, it might be best to schedule data collection for this module last. Here again, because we were not able to test our Leadership Module, we can only speculate at this point as to order effects problems (Table I

2. We would also recommend revisions of the research instruments for the specific modules. Some of the most important modifications we would suggest are:

a. Small Farmer Clientele Module. Questions regarding political articulation produced very little response. In replicating the study in another setting, these items should be carefully pretested. If the pretest indicates a similar pattern

TABLE IX

Suggested Sequencing of Data
Collection by Modules

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1. Institutional Linkage Module - yields mapping of relevance and centrality of institutions in the system

2. Institutional Interface Module - open-ended interviews with top management: provides their perspective and potential support

3. Survey approach can be carried out essentially simultaneously, or no specified order for the next three modules:

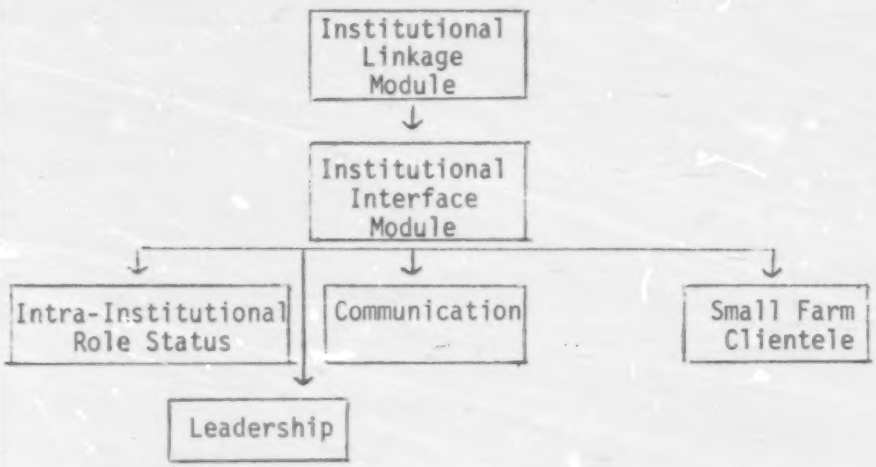
   a. Intra-Institutional Status Role Module

   b. Communication Module

   c. Small Farmer Clientele Module

4. Leadership Module - perhaps should be final data collected because of institutional hypersensitivity to topic area.

A GRAPHIC SEQUENCING OF DATA COLLECTION BY MODULES



of non-response, the items should probably be eliminated in the interests of economy. Results from the Modernity Index were not definitive and correlations with other variables quite low. Further work is needed on this index to make it a more useful tool in this analytical approach.

The question of dependent measures of project success has not been entirely resolved. The success of the project was to be measured by the continued participation of the clientele and the degree of achievement of program objectives. One of the main program objectives was increased farmers' incomes through increased production of corn and rice. In our Costa Rican experience we ran into a situation where adverse weather had negated financial benefits. Farmers dropped out of the project in La Fortuna due, at least in part, to loss of income caused by the drought.

We then turned to other possible indicators of project success. One such indicator was farmer participation in the project development. We measured farmers' participation as well as change in attitude toward change agencies and willingness to participate in future projects. None of these measures indicated favorable consequences of the project. Conversely we can look at our data results as substantiation of our research premises. Farmers' income declined; they were not involved in the project planning or implementation, their experience with the implementing institutions was

generally unfavorable and the projects collapsed.

Another goal was employment generation in rural areas. The limited size of the projects and their short duration could not give us a clear-cut answer to the goal's achievement. Farmers are not accustomed to record keeping and their recall of labor used over the past two or three years are rough approximations. We feel that the definition and measurement of project success needs further attention.

There are other sections of the farmer module questionnaire that need further pretesting before using in another country with different clientele. The premise that decentralization is related to more effective project implementation, the cost return section and the effect of infrastructure on project success all need further testing.

b. Intra-Institution Status Role Module. One of the problems which we encountered with this model was that respondents had difficulty with questions that differentiated among the goals, objectives and doctrines of their institutions. It may be that the concepts are more readily distinguishable at a theoretical level than in actual practice and that, in an operational sense, the distinctions are not important for the practitioner. Probably these questions should be culled down to a more manageable subset.

c. Communication Module. We found that those

questions we asked about general communication flows in the organization were not as useful as those which inquired directly about project-related communication. In the future, we would modify the questionnaire in the direction of eliminating items relating to general kinds of communication and developing more specific items about project-related communication.

d. Institutional Interface Module. The main problem related with the data collection for this module was the limited amount of time the researcher was able to spend in the field. This resulted in a relatively small number of interviews, so that there was little opportunity to cross-check the validity and perspective of a particular respondent's answers. A larger number of interviews within each institution would be highly desirable.

Summary

In this chapter we have attempted to set forth some of the problems the research team encountered in using the modular approach. In the main these were political and were the consequences of particular interests of some of the other organizations with which we worked. These kinds of problems always impinge upon research that entails collaboration among institutions, and they tend to be idiosyncratic to the particular research setting. We have documented them because they have had an effect on our own research and, hopefully, the narrating of our set of problems may alert other researchers to similar kinds of problems

they may encounter. Finally, we offered some recommendations as to how our own research instruments and the modular approach might be improved for future application.

Chapter IV
SUGGESTIONS FOR FACILITATING INSTITUTIONAL CHANGE

Premises Accepted

Our study team accepted the premise that public institutions are a dominant force in agricultural development projects in the LDCs and will continue to be so in the years ahead. We also were in agreement with most development analysts that the small and medium farmer should share in the development process and that these agricultural public institutions would have to more effectively meet the small farmer's needs if he is to gain a part of the development benefits.

The record of public institutions meeting the small and medium farmers' needs has been poor and so our team accepted as one of our goals the developing of a system of analysis for these public institutions. We developed this modular system of analysis and tested it in studies of public institutions in Costa Rica. We gathered many insights on institutional difficulties serving the small farmer clientele as recorded in the past three chapters. We also gained an appreciation of the institutional "costs" and seemingly few rewards for the institution making the organizational changes to serve the small and medium farm clientele.

Is it possible that present institutional changes be made with less social, economic and political costs? Or is the only route the one taken in many countries of creating new institutions?

There are three important considerations an institution may explore in terms of its capabilities before making a decision concerning its future commitment to the small farmer clientele: first, its ability to reorient and upgrade its management skills through management training workshops; second, its ability to train and retrain its personnel who will be expected to work directly with the small farmer by means of change agent interaction schools; third, it may evaluate the feasibility and desirability of organizing small farmer groups for purposes of program implementation.

The Management Workshop

Let us assume that an agricultural institution has made its commitment at the top management level to serve the small farmer. It has made the decision to allocate part of its personnel and budget to meet this commitment. The institution wants to meet the small farmer's needs and is willing to interact with him. It is willing to encourage two-way communication flow rather than the usual top-down. How does the institution go about making the necessary changes in skills, attitudes and operations in its organizations?

One such way of instituting necessary changes with seemingly least "costs" to the institution is through management workshops. Such workshops have been useful in sharpening the self-evaluative processes of an institution. Once the program commitment has been made, the administrator may seek the help of a consultant to evaluate and recommend changes in organizational structures and procedures

that would facilitate the implementation of the development tasks. These structures and procedures are the focus of the discussion of management participants in the workshop. These discussions are problem-oriented dealing with familiar or anticipated problems grounded in the economic, social and cultural conditions of a particular country. Through initial and subsequent workshops, an ongoing, self-correcting and self-improving mechanism can be built into development institutions that will make them viable in their society. Appendix A of this report elaborates on the rationale, processes and potential worth of these workshops in the remedial efforts of an institution.

Change Agent Training

In the Costa Rica setting, MAG personnel at the farm level are key people to any successful small farmer development project. These are the ones who work with the farmers and such personnel include immediate supervisors of these workers. We are convinced they must know, in an experiential way, the work of the small farmer (their clientele). The change agent needs a bond of empathy with the small farmer, for the small farmer will only interact with those who have earned his trust. The agents need technical knowledge of the agricultural enterprises they are dealing with. This knowledge must be based on an understanding of the principles involved in the technology so that with common sense they can relate the general recommendations to the farmer's specific situation. Above all other traits, these agents are educators and must be trained in communicating which includes listening and un-

derstanding. Part of the training of these change agents might focus on group dynamics of farm organizations, leadership training, group discipline, etc.

Small Farmer Organizations

Our experience suggests that unless rural and/or agricultural development projects that purport to reach the small farmer can find or help create viable small farmer groups, the development effort will generally fail. They will fail from an economic point of view. The costs of credit projects, for example, are too costly to administer on a one-to-one basis. They will fail for sociological reasons. Group discipline, intragroup information exchanges and the group defenses against an often hostile environment, including man-made and physical, are needed for survival of development efforts.

It should be added here that the regional director of the Cartagena project is very convinced of the importance of small farmer organizations. Even though the Cartagena project gave little evidence of this effort subsequent projects in the region would likely be more positive.

Policy Implications

When discussing policy questions or data, we often ask is this within the ball park? In reference to development programs for small farmers compared to commercial farm projects, we might ask not if we are in the same ball park but are we playing the same game? It is a premise of this report that programs to reach the small farmer can not be "more of the same" if they are to be

effective. We are in a new game and new rules will need to be considered. If the rules are different, certainly the coaching staff should go through a coaching clinic to gain the new perspectives. These are the administrators, the local change agent, the institutional inspector. The researcher and technician must be oriented to the new game, for the technological package they are asked to create has a different dimension and composition. This new "ball of technology" is in the experimental stage and for reasons that are implicit in the following remarks, may not be standardized for a long time. Let us make the ball game analogy more specific.

There is a public, a matrix of vested interests, that has traditionally guided the research efforts for agriculture. This public has influenced the agricultural colleges and their curriculum, it has directly and indirectly set the credit and extension programs for agriculture. These vested interests include the medium and large sized farmer, the agricultural merchant, the plantation owner and agri-business interests with their numerous friends in the governing bureaucracies. This group does not view kindly the plans and programs for the small farmer. They see the effort directed to the small farmer as a dimunition of their own role, a competition for the technical help they have long absorbed. It is a threat to their economic and social dominance and a lessening of their cheap labor supply. They see few trade-off advantages to them from the small farm program.

The conclusion from these observations is that an effective small farm program must have strong, consistent commitments at the national political level. In addition,

administrative leaders of the implementing institutions must likewise be committed, innovative and teachable if they are to make a positive contribution in this new ball game. Within the institution a new priority system may be needed. The penalty-reward system will need to be revised to encourage and facilitate working with this new clientele.

Projects should be chosen with new care, making sure they are realistic in terms of national goals and resources and are capable of being implemented at the local level. These projects would require the intended clientele's input in terms of priority and administration. Project objectives would be spelled out in measures subject to reasonable evaluation including by whom, when and where the evaluation would take place.

The change agent who constitutes the connecting link between the institution and the small farmer is of such key importance that any small farm program that hopes to succeed must invest in training and motivating this agent to serve his new client.

We have been talking about the staff and management of public institutions and the changes they are facing to meet the needs and improve the livelihood of this new agricultural producer's team.

Team in this sense is certainly an inclusive term. In most low income countries, it includes thousands and tens of thousands of farm families. Most are subsistence farmers with a minimal market orientation and discipline. Geographically, they are spread over great areas and sometimes their products cannot reach the market for months at a time. There is a variation in their training, prone-

ness to change, economic conditions, land tenure, type of agricultural enterprise, and level of technology used. Yet within the small farm category, the commonality of problems overshadows the observable differences noted above.

It is evident from research results that the small farmer team is poorly organized--if at all--and leadership is minimal. The small farmer tends to be suspicious of government and can easily recall his experience or that of a friend who ended up "worse off" from some government project.

As stated earlier, the purpose of this report is not to plead hopelessness for the task of improving the small farmer's lot. Rather it is to argue for broad, yet definitive goals and related evaluation procedures, institutional commitment and willingness to change to reach the specified objectives. There is no easy way, no secret passage, that will allow the tens of thousands of small farmers to move from present inadequacies to a desired higher standard of living. In the low income countries the public institution is given the responsibility to implement this change. The commitment must be a major one and it must continue for many years. Crash programs have notably crashed.

One major policy question remains. Are traditional public institutions that have "managed" the agricultural sector in the past willing and able to make the changes needed to serve the small farmer and enable him to reach a viable spot in the nation's social and economic life. The agricultural administrator will say "Certainly, we've always served the small farmer and if you'll give us more

resources we'll serve him better." This research and the evaluation of hundreds of case studies and reports leads us to be much more pessimistic. It is a matter of record that some major institutions in the United States and abroad have, over a period of years, changed their operations to serve a new clientele and thus widened or strengthened their power base. But the history of institutions forsaking or even diminishing services to their present power base to meet the needs of a diffuse, politically inarticulate group such as the small farmer mass is rare indeed. It is our premise that new institutions or major revisions of old ones will be required to meet the expanding needs of the small farmer in the decades ahead.

Appendix A
MANAGEMENT TRAINING FOR RURAL SECTOR CHANGE

Introduction

Around the world, organizations are trying to help the rural sectors of different countries develop. The United States government and land-grant universities have been deeply and variously involved in that development process. In some cases, the help has been in the form of direct benefits to people in the rural sector, such as credit, seeds, fertilizer, etc. In others it has been in the form of upgrading and training nationals who work with the people of the rural sector. Examples of this latter involvement are the training and upgrading programs for Extension workers in many countries.

However, little effort has been given to the up-grading of another major aspect of any organization--that of management. Cross-cultural diffusion and adoption research has shown that most change is brought about in a planned way, with an organization of planned change agents behind the idea or practice to get it adopted. Thus organizations such as extension services are important to bringing about change. The quality of these organizations varies. It would seem that the better managed they are as organizations the more benefits there should be for the rural sector they are trying to serve.

Organizational Change Strategies

We know a number of things about change and what makes it most likely to take place:

1. Those who are expected to change (learn) must be actively involved in the process of deciding that change is important and needed, learning the skills or ideas or attitudes needed to carry out a change successfully, and finally incorporating any change into their ongoing pattern of operations and behaviors and reinforcing and supporting those change patterns.
2. Change potential must be built into the host organization, since an organization must continue to be flexible enough to meet the demands of a changing rural sector.
3. Not only must change take place, but there must be built into the changed organization the support for that change and support for continual reassessment and upgrading of change as the need for this becomes apparent.
4. Thus involvement of any outside change agent with a host organization or organizations operates best over time. While one-shot consultation, training, or research programs can have some impact, the more ideal way to operate is to develop a "partnership" of planning and execution of change-oriented programs over time so that any change becomes institutionalized and regularized in the best way possible. And so the idea of more or less continual upgrading of the organization also gets more established and supported.

Organizational Process

In helping an organization upgrade itself, we are concerned with three major areas:

I	II	III
Sources of Inputs to the Organization for its programs.	Processing, Production and Distribution of these Inputs as Outputs useful to the Rural Sector.	Impacts of Outputs on the Rural Sector
(Enabling legislation, financing, personnel, information, etc.	(Programs, services, research, teaching materials, credit, tools and work materials, etc.	(Change, improvement, development, etc.)

Management people have to be concerned with all three of these areas. They need to get enough inputs so that their program and organization can continue. They need to see that appropriate resources are available for the task at hand. And they are responsible for seeing that their organization uses those inputs according to the guidelines and standards laid down for them.

They oversee the processing, production, and distribution system of the organization itself. Again, management must see that appropriate personnel, materials, equipment and processes are available to carry out these responsibilities.

And finally, management is usually held accountable by someone or somebody, for having some impact on the rural sector. The rural people themselves, the organization itself or those who supply the inputs for the organization--any or all of these groups can ask for such an accounting.

The action research, training and consulting services proposed in this plan are aimed at helping managers in organizations serving the rural sector do a better job in these three areas.

Joint Efforts Needed

The management tasks outlined above and in the preceding chapters can best be accomplished through a team effort of host nationals and trained consultive personnel. Our management research group concludes that the tasks should be a shared effort with the distribution of responsibilities somewhat as follows. The U.S. team would contribute:

1. A framework with which to look at, analyze and improve management.
2. Knowledge of a number of useful management models and tools.
3. Knowledge, skills and background in training, planning, design and execution.
4. Knowledge, skills and background in action research planning, design, execution, analysis, interpretation and application.
5. International experience in Latin America particularly, but in other parts of the world as well. This experience not only helps the team know what is appropriate, but it also means they know many more alternatives that might be useful as solutions to management and organizational problems and concerns.
6. The potential for continuing outside support for

change and development after the initial efforts an organization has made to understand itself and institute appropriate changes.

Host nationals would contribute heavily in the areas outlined above. In addition, they would have unique contributions to make in the following areas:

1. Intimate knowledge of their own organization, systems, management, cultures and processes.
2. Potential trainers of trainers to help keep the upgrading of their and similar organizations in their country going after initial joint efforts. This is an important part of building-in the continuing potential for change in an organization.
3. The potential for change. Without their willingness, legitimization, support and continuing efforts, change cannot take place. Too, their perceptions of what is or is not possible set limits on just what and how much change can be brought about.

Involvement and Change Processes

A general change model would involve:

GRAPH I

A General Change Model

Development of a felt need on the part of the host organization or group for change.

↘

Appropriate diagnosis and training to clarify, support, get skills and attidues for, and implement changes seen as needed.

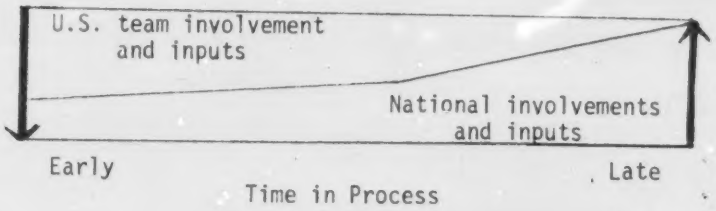
↘

Stabilizing the change, evaluating it and making any needed adjustments so that it can be maintained and regularized.

In general, both the U.S. team and the host country or organization would need to be heavily involved in the above process. However, the extent of involvement of the two would vary over time. Again, a general model may help clarify this point:

GRAPH II

Joint Team Involvement



Thus in the early stages of working together, there might well be heavy involvement from the U.S. team in helping an organization think about and gather data and information for appropriate ways of proceeding and areas for development in that organization. As the program developed, it would need increasing involvement and inputs from the nationals, with the U.S. team in a coaching and helping role. Part of these efforts would include training the host team to do appropriate action research and training.

Of course, in an organization or national situation where the nationals are well along in their thinking and efforts toward management development and change, the U.S. involvement would be secondary from the beginning. And there will be situations where the U.S. team serves mainly in a consultant and trouble-shooting capacity.

Thus many different combinations and situations are possible. Our general plan is to develop a grouping of action research and training modules appropriate for organizational analysis and management development. These modules then could be put together to fit the needs and desires of a given organization or of professionals in like jobs across organizations. But first we have the problem of getting access to and the involvement of relevant nationals.

One way this might develop, and one that seems to us to contain many of the elements for more successful and lasting change, is this:

GRAPH III

Involvement of Host Country Key Personnel

U.S. team contact with

↓

Legitimizers in the host country and/or organization

↓

To investigate, clarify, intensify and focus any felt needs and interest in management development. To gain acceptance of the general approach and commitment to trying it.

Involved for the U.S. team is the problem of gaining trust and credibility--to get access to----------→

→ Existing or potential trainers, evaluators, organizations, management staffs.

Involve them in:

1. Data and fact gathering
2. Begin training the trainers

The data gathering might well be in the form of a case study of a given rural-sector-serving agency in order to expand our joint knowledge and data about organizations, management, and management processes in that country. That information would be helpful in: (1) developing a training program for management, and (2) pointing up specific problems calling for a joint problem-solving effort in relation to management and organizational effectiveness and efficiency.

Following or concurrent with a specific case study, consideration of interorganizational analysis, training, and aid possibilities and procedures could be attacked.

In all these efforts, the team would be available to

help the nationals learn:

1. Different useful ways of looking at, thinking about and analyzing their own organizations.
2. Skills needed to continue to improve their own organizations.

A research and training module for this first stage involving the U.S. team and top-level host national legitimizers might include such elements as:

1. A series of adaptable action research instruments and procedures for gathering useful information about the rural sector of that country.
2. A series of adaptable action research instruments and procedures for gathering useful information about various levels of organizations serving the rural sector--levels including field, regional and national levels and specifically about management people at these levels.
3. Procedures for helping top administration people clarify the goals, needs and values of their organizations.
4. Procedures for helping the U.S. team and host nation administrators clarify and share goals, needs and values for their potential joint efforts to upgrade management capabilities.
5. Examples of data and procedures for research and training that have proved helpful in other countries in similar projects.

Costa Rica--A Specific Case

Costa Rica is an example of the process we are developing. There an MSU team has been involved with the Inter-American Institute of Agricultural Sciences (IICA) and US-AID in researching the situation with a number of organizations serving the rural sector. Action research teams have gathered information about the rural-sector-serving agencies, their operations and their impact at the rural level. A documented picture of some of the successes and problems of these agencies that are the proper concern of management, comes out of the data presented in earlier parts of this report. These agency problems related to management might well benefit from the training programs discussed here.

The following table lists some of the findings from action research conducted in Costa Rica that to us indicated the potential need for and appropriateness of possible administrative action, training, and/or further action research by MAG management. The list will give the reader some idea of the directions that are possible out of such an action-research project.

TABLE X

Research Results and Suggested Follow-Ups

Costa Rica Action Research Finding	Possible Administrative Action to Affect	Possible Training to Affect	Possible Further Research Needed
1. Fewer Cartagena farmers knew of the MAG project than at La Fortuna.	Encourage more information diffusion, produce more information to be diffused. Be sure agents are clear what is to be diffused.	Diffusion process, methods of diffusion.	What methods and/or media work best for diffusion of such area?
2.a. Lack of feedback from local La Fortuna farmers to any level of MAG, so MAG did not correct project faults.	Open channels for feedback, set up regular feedback channels, reward agents and farmers for feedback.	Importance of feedback, how to gather feedback, present, analyze, channels to use.	a. Exactly what were the project problems? (Use research to get feedback.)
b. No systematic MAG opinion-gathering, evaluating, No sharing by farmers of their ideas with MAG.			b. Ways of encouraging feedback especially in Cartagena situation.
3. Differences in farmer outlook and situation, culture, tradition, between Cartagena and La Fortuna--impact of these differences on change adoption.	Diffuse information on differences, adjust programs to take account of crucial differences.	Individual and group differences, their importance to adoption and social change.	Refine the differences, to test those that have the most importance. Test alternative ways of influencing farmers in each "culture."
4. Farmers say their worse problems are climate and plagues. Agents see the main problems	Be sure that work is being done in primary problem areas.	Up-date agents in pest work, dealing with drought and wetness. Help agents learn to ac-	What is agent behavior in helping? What does he help with, concentrate on? How much of his help is seen as re-

Costa Rica Action Research Finding	Possible Administrative Action to Affect	Possible Training to Affect	Possible Further Research Needed
as lack of education, land, resources, credit.		curately arrive at farmer needs for help.	lated to his perception of their problem?
5.a. Agents spend almost 75 percent of their total time in direct farmer contact.	Look at impact of such personal contact, vs. impact of other methods or combinations.	Training in alternative methods. Time use analysis and evaluation. Method impact training.	Why isn't this intensive method more effective? What does the agent actually do in his contacts? What are the impacts of alternative methods?
b. Agents report over half their time is with small farmers. Small farmers report little agent contact in Cartagena.	b. Evaluate discrepancy.	b. Effectiveness of agents working with small farmers.	b. Study time and manner of contact of agent with big vs. small farmer.
c. Over 80 percent of farmer contacts are on the farm.			
6. Only some use made of demonstrations by agents, few use mobile schools, leaflets, radio.	Encourage use of alternate media and training in their production and use.	Train agents to produce and use alternatives to personal contact.	What is the impact of differing media alone and in combination?
7. Higher farmer-agent contact in La Fortuna than Cartagena, according to farmers.		Train in farmer contacts: approach, counselling, questioning, data gathering, problem solving, decision-making, information sources.	What impact in each area can be related to contact? What are the barriers to contact?

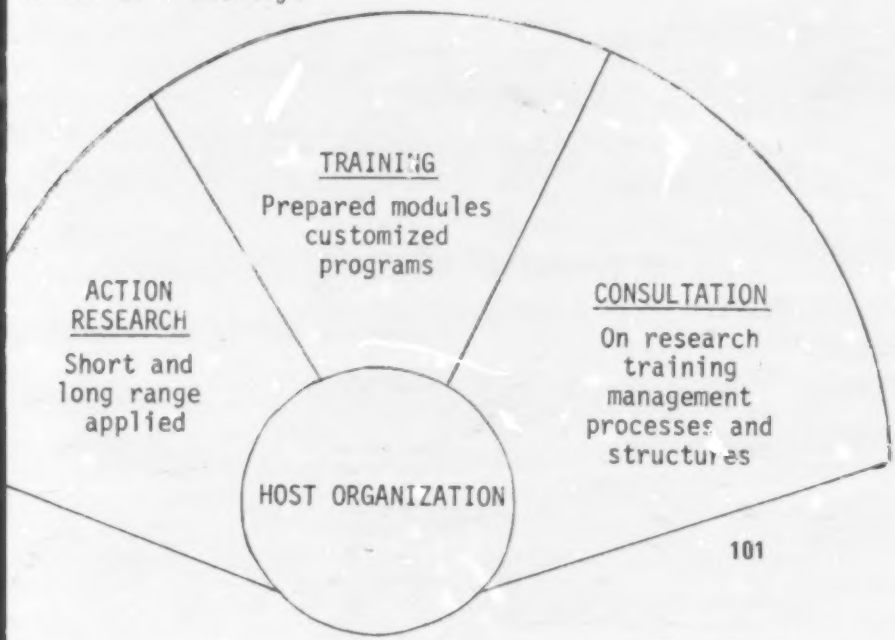
Costa Rica Action Research Finding	Possible Administrative Action to Affect	Possible Training to Affect	Possible Further Research Needed
8. Desire of some agents for more supervisory contact.	See that such contact is increased for those who want it.	Train supervisors in management interpersonal relations, counselling, maybe technical subject matter. Organizational roles, channels, communication.	Impact of supervisor contact. What kind of contact is most needed, helpful, for what work styles and/or situations?
9.a. At National level--less satisfaction with communication with subordinates than with superiors.	Look for ways to correct.	Train in counselling, interpersonal communication, organizational communication, channels.	Why the dissatisfaction? What are the problems?
b. MAG reporting difficulty of communicating along hierarchical lines.			
c. High-communication dyads (boss-subordinate) result in generally more agreed on goals, values, doctrine of organization.			

Again, the purpose of the table is to give the reader some idea of the scope of possible follow-up activities an organization's management could consider as the result of gathering some facts and information about their organization.

Obviously, not everything listed in the table could or would be done. Priorities would have to be set among the possible actions. But it is clear that out of each finding, there are choices of what could be done along the lines of administrative action, training, and/or further action research in order to tackle each problem.

U.S. Team Development

We have been developing a team with interests and abilities related to the management area that can offer and supply services in research, training and consultation in organizational management related to serving the rural sector of a country.



Exactly what would happen in a given situation, of course, would vary. But the U.S. team would be flexible enough to start wherever the host country or organization is and move with them from there, according to jointly arrived-at goals and needs.

The expectation would be that nationals in training would be involved in analyzing their own organizations, gathering data on those aspects of their organizations that they need and find lacking, and in planning for development and change as appropriate.

The U.S. team will develop modules of training materials and procedures for possible host organization use. These modules would probably include action research procedures for the gathering of needed data about the processes, etc , involved in the content of each module, plus models, concepts, facts, etc. that would make appropriate background for trainees' reading and for staff lecturettes. Each module would also include various experiential learning materials and procedures so that participants would be heavily involved in experiential learning as well.

And each module would contain procedures for investigating and analyzing the situations concerning the content of the module in relation to the organization or organizations being trained.

There might well be modules developed around these areas, as examples:

1. Decision making
2. Motivation
3. Conflict uses and resolution
4. Team building

5. Goals and values determination
6. Performance objectives and evaluation
7. Personnel hiring, transfers, training, promotion, firing
8. Organizational communication
9. Budgeting

These serve only to illustrate some of the possibilities that exist. Such modules could be used in a variety of combinations, depending on the training needs of a particular group.

While any of these three aspects could operate separately for a host--action research, training, consultation--our ideal pattern would be the involvement in all three as appropriate with and for the host.

Finally, some level of continuing relationship between the U.S. team and the host nationals would be most desirable. Such a relationship might include:

1. Periodic assessment visits by U.S. team members to look at current needs for research and training.
2. Consultation, presentation, talks, teaching assignments from the U.S. team on specific requests from the host nations.
3. Visits to the U.S. by nationals to seminar and jointly develop research approaches and training materials.
4. The development of a management newsletter to share the latest ideas and knowledge and information sources about management, and to keep

trainees in contact with each other and the central U.S. team.

5. Development of publications by the U.S. team on topics where acceptable materials and/or information on management for rural sector development is not currently available.
6. Development of management training materials relevant to organizations serving the rural sector.
7. Coordination of international workshops, conferences and seminars on rural sector development and its related management aspects.
8. The U.S. team serving as a referral center to put nationals in touch with other U.S. and international resources that might be helpful to them.
9. Setting up of a means for regularly sharing ideas, materials and resources in management research and training among former participants.
10. Visits to the U.S. by nationals for further training.

Such follow-up involvement is very much in the same spirit of mutual support and reinforcement pointed out earlier as very desirable to sustain and build on change.

Thus what we are seeking in all aspects of such a program as we propose is long-term, continuing relationships that have the highest probabilities of paying off for the organizations we work with and the rural sectors that they in turn work with.